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THE ORGANIZATION OF EDUCATIONAL RESEARCH IN THE UNITED STATES.

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*EDUCATIONAL RESEARCH, RESEARCH, EDUCATION, *ORGANIZATION, *GRADUATE STUDY, GRADUATE PROFESSORS, HIGHER EDUCATION, PROFESSIONAL EDUCATION, UNIVERSITIES, GRADUATE SURVEYS, SURVEYS, *CAREERS, CAREER CHOICE, CAREER OPPORTUNITIES, *ADMINISTRATION, COLLEGE ADMINISTRATION, INFORMATION DISSEMINATION, NEW YORK CITY, NEW YORK

THE CHIEF TECHNICAL PROBLEM OF THIS STUDY WAS TO MEASURE THE NUMEROUS SOCIAL CONDITIONS WHICH MIGHT CONCEIVABLY IMPINGE ON THE PRODUCTION OF RESEARCH AND OF RESEARCHERS BY GRADUATE SCHOOLS OF EDUCATION. THE TECHNIQUES EMPLOYED INCLUDED (1) QUESTIONNAIRE SURVEYS OF EDUCATION DEANS, RESEARCH COORDINATORS, DIRECTORS OF RESEARCH UNITS, PROJECT DIRECTORS IN UNITS, AND AUTHORS OF PUBLISHED RESEARCH REPORTS, (2) FIELD INTERVIEWS AND OBSERVATIONS OF SELECTED RESEARCH BUREAUS AND CENTERS AND OF THE WORK OF PROFESSIONAL ASSOCIATIONS, (3) DOCUMENTARY ANALYSIS OF MATERIALS SOLICITED THROUGH QUESTIONNAIRES, (4) CONTENT ANALYSES OF SCHOOL OF EDUCATION CATALOGS, RESEARCH ARTICLES PUBLISHED IN 1964, AND RESEARCH PROPOSALS SUBMITTED TO THE COOPERATIVE RESEARCH PROGRAM, U.S. OFFICE OF EDUCATION, AND (5) SECONDARY ANALYSIS OF SURVEY DATA FROM RELATED STUDIES. NUMEROUS CONCLUSIONS, RECOMMENDATIONS, AND TABLES ARE PRESENTED IN EACH OF EIGHT CHAPTERS. (JC)

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THE ORGANIZATION
OF EDUCATIONAL RESEARCH
IN THE UNITED STATES

Cooperative Research
Project No. 1974

by

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Bureau of Applied Social Research

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CONTENTS

Acknowledgments iv

List of Tables xi

I. DESIGN AND EXECUTION OF THE STUDY

A. The Problem and Its Background 1

B. Techniques Employed: Problems and Contributions 4

1. Questionnaire Surveys 5
2. Field Trips 9
3. Documentary analysis 10
4. Content analysis of school catalogues 10
5. Study of research proposals and articles 10
6. Previous surveys and historical data 11

C. The Integration of Techniques 13

D. Technical Information about the Distribution and Return of Questionnaires 16

II. VALUE CLIMATES AND ARRANGEMENTS FOR RESEARCH 21

A. Value Climates -- The Distribution of Goals and of Influence on Goals 24

B. Arrangements for the Facilitation of Research 32

1. The Research Coordinator 34

2. Research Committees 47

C. Organizational Plans and Dreams 49

D. Summary and Conclusions 57

III. RECRUITMENT POLICIES, JOINT ARRANGEMENTS WITH OTHER DEPARTMENTS, AND SUBSTANTIVE AREAS OF RESEARCH 61

A. Recruitment of Research Manpower 61

B. Relations with Liberal Arts and Sciences 74

1. Administrative Provisions 78
2. Interdisciplinary Collaboration in Research 83

C. Research Topics 86

D. Summary 90

IV. RESEARCH UNITS IN SCHOOLS OF EDUCATION -- THEIR GROWTH, ACTIVITIES, STRUCTURE AND RELATIONS WITH LIBERAL ARTS AND SCIENCES 93

A. Observations on the History of Research Organizations in Education 96

B. Some Major Organizational Dimensions 106

C. Research Topics Inside and Outside Bureaus 115

D. Recruitment and the Problem of Individualistic Research. . 121

E. Collaborative Research 128

F. Relationships with Non-Education Departments 135

G. Summary and Conclusions 145

V. THE MANAGERIAL SCHOLAR 151

A. The Critical Role of Directors in the Development and Maintenance of Research Units 152

B. Opportunities for Intellectual Leadership 156

C. Styles of Leadership 164

D. Sources of Leadership Styles 184

E. Faculty Research Coordinators versus Bureau Directors . . 192

F. Formal Authority and the Stereotype of the "Empire Builder" 198

G. Summary and Conclusions 208

VI. RELATIONS BETWEEN SERVICE AND RESEARCH 213

A. Sources and Consequences of Close Relations Between Professional Departments and School Practitioners 215

B. The Effect on Research of Education's "Permanent Crisis". 220

C. The Effect of Service Involvement on Conceptions of Research 227

D. Competition for Research Manpower 231

E. Service and Research Within Research Units 237

F. A Modest Proposal 248

G. Summary and Conclusions 250

VII. TRAINING FOR CAREERS IN EDUCATIONAL RESEARCH 253

A. An Assessment of the Emphasis on Research Training . . . 255

B. A Conceptual Framework for Examining the Production of Researchers 261

C. Production of Researchers According to Student Selection, Research Climate, and Training Provisions 267

1. Student Selection and the Production of Researchers 267
2. Research Climate and the Production of Researchers . 277
3. Training Provisions 282

a. The Ph.D. vs the Ed.D. 282
b. Course work vs Apprenticeship on Projects . . . 289
c. Interdisciplinary Training 303

D. Research Training in Bureaus 309
1. An Overview 309
2. Production of Researchers by Research Units According to Selected Organizational Features . . . 317

a. Training Provisions 317
b. Integration with Teaching Departments 322

E. Summary and Conclusions 337

VIII. RECOMMENDATIONS 343

A. Recommendations for the Organization of Educational Research 343

1. Research Units 343
2. Service and Research 344
3. Relations with the Arts and Sciences 346
4. Training for Research Careers 348
5. Federal Administration of Research Funds 350

B. The Interplay of Research and Action 352

APPENDICES

A. Features of Research Proposals Submitted to the Cooperative Research Program Between 1956 and 1963

B. Letter and Form Sent to Deans

C. Tables

D. The Survey of Authors

E. The Use of Field Representatives in a Questionnaire Survey of University Personnel

F. Questionnaires -- Deans, Coordinators, and Directors

G. Indices

LIST OF TABLES

Table		Page
2.1	Emphasis on Research by Various Groups, and the Influence Which They Have on the Goals of the School . .	26
2.2	Research Quality According to Emphasis on Research . . .	31
2.3	Activities of Faculty Research Coordinators	35
2.4	Circumstances under Which Coordinators and Deans without Coordinators Have Intervened in Projects	38
2.5	Mean Proportion of Faculty Doing Research (Outside Bureaus), and Research Quality, According to the Existence of a Coordinator	40
2.6	Research Quality of Schools of Education According to the Existence of a Coordinator and the Existence of a Research Unit	41
2.7	Research Quality of Schools of Education According to the Existence of a Unit Which Is Mainly Devoted to Research (in Large Schools only)	42
2.8	Existence of a Coordinator, According to Emphasis of Various Groups on Research	44
2.9	Existence of a Coordinator According to the Index of Research Emphasis	45
2.10	Research Quality, According to Emphasis on Research by Various Groups and the Existence of a Coordinator . .	46
2.11	Future Plans of Deans and Coordinators, and How They Would Allocate $200,000	51
2.12	Sources of Support for Research Inside and Outside of Research Units	53
2.13	Proportion of Deans Who Desire Increased Research Funds from Each of Several Sources	54
3.1	Recruitment Preferences of Deans for Teachers, Researchers, or School Practitioners in Various Fields .	63
3.2	Research Quality According to Student-Faculty Ratio . .	68
3.3	Research Quality According to Proportion of Faculty with Teaching Reductions for Research	69

Table | Page

3.4 Mean Number of Fields for Which a Person Who Has Mainly Done Research Is Preferred by Deans, According to Research Quality of the Schools 71

3.5 Research Quality According to Participation of the Academic Faculty in Recruitment of Education Faculty 72

3.6 Research Quality of Schools of Education, According to Joint Selection and Reputation of Liberal Arts Departments (Keniston Scale) 73

3.7 Proportion of Schools with Selected Joint Arrangements Between Education and Non-Education Departments and Professional Schools 78

3.8 Research Quality According to the Existence of Joint Arrangements with the Liberal Arts and Sciences 81

3.9 The Composition of Research Teams Outside of Research Units 84

3.10 Current Topics of Research Outside of Bureaus and Topics Preferred by Deans 87

3.11 "Supply" and "Excess Demand" for Research on Various Topics 89

4.1 Mean Numbers of Professional Personnel Associated with Research Units and Mean Number of Doctoral Students Working on Projects 94

4.2 Age of Research Units in Education 95

4.3 Annual Rates of Founding, Mortality and Growth of Educational Research Units for Selected Periods Since 1923 102

4.4 Ratios of Units to Doctoral Programs in Education in Selected Years Since 1923 104

4.5 Research Orientation, Substantive Focus, Departmental Affiliation, and Facilitation of Faculty Researchers . . 108

4.6 Research Orientation, Substantive Focus, Departmental Affiliation, and Facilitation of Faculty Research, According to Age of Research Units 110

4.7 Research Orientation of Units According to Proportion of Funds from Federal Government for "Studies" 111

Table | Page
4.8 Facilitation and Departmental Affiliation, According to Research Orientation of the Units 112

4.9 Topics of Research Inside and Outside of Research Units . 116

4.10 Ranking of Research Topics According to the Extent to Which They Are More Characteristic of Research Outside of Research Units 119

4.11 Difficulty of Recruiting Faculty from Education to Do Research in the Unit 123

4.12 Proportion of Directors Who Have Difficulty Recruiting Faculty from Education, According to Research Orientation of the Units 125

4.13 The Extent of Teamwork Within Research Units and Outside of Research Units 128

4.14 Prevalence of Teamwork and Preference of Directors of Research Units 130

4.15 The Prevalence of Individualized and Collaborative Effort Within Units According to the Directors' Preferences 131

4.16 Sources of Recruitment of Professional Staff in Research Units in the Past Three Years 137

4.17 Existing Arrangements of Research Units with Academic Departments Outside the School of Education, and with Other Professional Schools 139

4.18 Interdisciplinary Relationships According to Research Orientation of Units 140

4.19 Mean Number of Relationships with Academic Departments Outside the School of Education According to Age of the Unit 142

4.20 Mean Number of Relationships with Academic and with Professional Departments Outside of Education, According to Facilitation, Departmental Affiliation, and Substantive Focus 143

4.21 Mean Number of Relationships with Academic Departments According to Departmental Affiliation and Facilitation, within Levels of Research Orientation 144

Table Page

5.1 Goal Setting of the Director, According to Research Orientation 155

5.2 The Roles Most Often Performed by Directors of Research Units 158

5.3 Contribution of Directorship to Own Research, According to Substantive Focus of Unit 160

5.4 Contribution of Directorship to Own Research, According to Size of the Unit 161

5.5 Contribution of Directorship to Own Research, According to Presence of an Administrative Assistant 162

5.6 Circumstances Under Which Unit Directors Have Intervened in Projects 165

5.7 A Typology of Leadership Styles 167

5.8 The Roles Most Characteristic of Four Styles of Leadership 169

5.8a Approval Rates of Proposals and Budget Increases Associated with Four Styles of Leadership 171

5.9 Research Activities and Backgrounds Associated with Four Leadership Styles 173

5.10 Preference for Individual or Team Research Associated with Four Leadership Styles 175

5.11 The Amount of Freedom to Determine the Research Program and Support from the Administration Associated with Four Leadership Styles 176

5.12 Absolute and Comparative Success of the Unit Associated with Four Leadership Styles 179

5.13 Contribution of Directorship to Own Research, According to Four Styles of Leadership 181

5.14 Mean Number of Plans for Future, With and Without Money, Associated with Four Styles of Leadership 181

5.15 Quality of School's Research and Orientation of the Unit Associated with Four Styles of Leadership 186

5.16 Type of Graduate Training and Reference Groups Associated with Four Styles of Leadership 188

Table Page

5.17 Activities of Directors of Research Units and of Faculty Research Coordinators 194

5.18 Circumstances under which Unit Directors and Coordinators of Faculty Research Have Intervened in Projects. 197

5.18a The Proportion of Unit Directors and of Coordinators Who Assist with Analytical Problems, and Who Intervene in Analytical Problems 198

5.19 The Formal Authority of Directors of Research Units, and Their Freedom to Determine the Research Program, According to Degrees of Authority 201

5.20 Mean Authority Scores of Directors According to the Unit's Type of Activity, Size, and Age 204

6.1 Selected Activities Checked as "Educational Research" by Deans, Coordinators, and Unit Directors 229

6.1a Proportion of Directors Who Apply the Term "Educational Research" to Selected Service Activities, According to Whether the Service Is Performed by the Unit 230

6.2 Desire of Faculty Members to Become Associated with Field Service and with Research Bureaus (according to deans and coordinators) 232

6.3 Involvement of Faculty Outside Bureaus in Field Services and in Research, and the Deans' Preferences . . 234

6.4 Existence of Competing Demands between Research and Field Service According to Deans, Coordinators, and Unit Directors 235

6.5 Existence of Competing Demands between Research and Field Service in Public and Private Institutions According to Deans and Unit Directors 236

6.6 Services Performed by Research Units in Schools of Education 240

6.7 Research Productivity of Directors, According to the Research Orientation of the Unit 248

7.1 Proportion of Schools Emphasizing the Preparation of Researchers 256

Table Page

7.2 Proportion of Schools with Programs for Training Researchers 257

7.3 Proportion of Schools Emphasizing Research Training and Offering a Program for Research Training 258

7.4 Mean Proportion of Doctoral Recipients per School in Past Three Years Who Immediately Entered Various Positions 260

7.5 Proportion of Schools with Varying Proportions of Doctoral Recipients Entering Research Positions in Past Three Years 261

7.6 Selectivity and Production of Researchers 268

7.7 Type of Control and Production of Researchers 268

7.8 Index of Research Emphasis and Production of Researchers, According to Selectivity of the School . . 270

7.9 Selectivity and Production of Researchers Controlled by Research Climate and Training Provisions 272

7.10 Entrance Requirements and Production of Researchers . . 273

7.11 Proportion of Doctoral Candidates Working on Ph.D.'s According to Entrance Requirement of Professional Experience 274

7.12 Production of Researchers According to Entrance Requirement of Professional Experience and Proportion of Doctoral Candidates Working on Ph.D.'s 275

7.13 Production of Researchers According to Entrance Requirement of Professional Experience and Selectivity 276

7.14 Production of Researchers and Entrance Requirement of Professional Experience, According to Selectivity and Ph.D. Activity 276

7.15 Production of Researchers According to Several Measures of Research Climate 279

7.16 Differences Between Productivity Means for High and Low Selective Schools Controlled by Several Variables 280

Table		Page
7.17	Production of Researchers According to Selectivity and Several Measures of Research Climate	281
7.18	Production of Researchers According to the Proportion of Students Working on Ph.D.'s	283
7.19	Amount of Research Preparation and Experiences of Ed.D. and Ph.D. Recipients According to Graduation from Single-Degree or Mixed-Degree Schools	284
7.20	Proportion of Deans Who Agree that the Ph.D. and Ed.D. Should be Specialized Degrees, According to Proportion of Ph.D. Candidates	288
7.21	Production of Researchers According to Volume of Ph.D. Activity and Dean's Attitude toward Differentiation of the Two Degrees	289
7.22	Types of Research Courses Offered by 110 Schools or Departments of Education which Grant the Doctorate (1963-64)	292
7.23	Proportion of Schools with Various Types of Research Divisions	294
7.24	Proportion of "Research Methods" Courses Found in Various Divisions of 106 Graduate Schools of Education, 1963-64	296
7.25	Production of Researchers According to Availability of Research Courses in Education, and Requirements Outside of Education	300
7.26	Production of Researchers According to Apprenticeship on Faculty Projects Outside of Bureaus	301
7.27	Production of Researchers and Apprenticeship According to Selectivity, Research Quality, and Emphasis on Research Training	302
7.28	Agreement of Deans with Statement on Advisability of Outside Training in Research	304
7.29	Production of Researchers According to Proportion of Education Faculty Trained Mostly Outside of Education	305
7.30	Production of Researchers and Interdisciplinary Faculty According to Selectivity, Research Quality, and Emphasis on Research Training	306

Table		Page
7.31	Production of Researchers According to Interdisciplinary Faculty and Apprenticeships	307
7.32	Production of Researchers According to Requirement of Courses Outside Education and Apprenticeships . . .	308
7.33	Proportion of Research Bureaus with Various Training Arrangements	310
7.34	Production of Researchers by Bureaus According to Several Training Provisions	318
7.35	Production of Researchers by Bureaus According to the Existence of a Seminar and Systematic Apprenticeship	320
7.36	Production of Researchers by Bureaus According to Proportion of Projects with Students and the Existence of a Program for Systematic Apprenticeship	321
7.37	Facilitation of Faculty Research and Departmental Affiliation	328
7.38	Training Opportunities for Education and Non-Education Students in Bureaus, According to Departmental Affiliation	329
7.39	Training Opportunities for Education and Non-Education Students in Bureaus, According to Facilitation of Faculty Researchers	330
7.40	Training Opportunities for Education and Non-Education Students in Bureaus, According to Facilitation and Departmental Affiliation	332
7.41	Production of Researchers by Bureaus According to Facilitation and Departmental Affiliation	333
7.42	Production of Researchers by Bureaus According to Two Types of Integration with the Teaching Faculty . .	334
7.43	Production of Researchers by Bureaus According to Type of Research Training Emphasized	334
7.44	Production of Researchers by Facilitating and Non-Facilitating Bureaus, According to (1) The Research Quality of the School, (2) Proportion of Bureau Personnel Engaged in Research, and (3) Arrangements with Non-Education Departments	336

APPENDICES

Table		Page
A.1	Annual Submissions by Type of Project	A-5
A.2	Annual Approval Rates by Type of Project	A-7
A.3	Amount of Funds Requested, Size of Staff, and Planned Duration, by Type of Project	A-9
A.4	Approval Rates According to Amount of Funds Requested, Size of Staff, and Duration, by Type of Project	A-10
A.5	Specific Substantive Areas by Type of Project	A-12
A.6	Submission and Approval Rates: "Traditional" and "Contemporary" Topics, by Type of Project	A-13
A.7	The Group Studied, by Type of Project	A-16
A.8	Research Methods by Type of Project	A-19
A.9	Discipline of the Principal Investigator, by Type of Project	A-19
A.10	Level and Control of Institution by Type of Project	A-20
A.11	Approval Rates According to Level and Control of Institution, by Type of Project	A-20
A.12	Quality of Institution (Berelson Scale) by Type of Project	A-23
A.13	Approval Rates of Better and Poorer Institutions (Berelson Scale), by Type of Project	A-23
A.14	Location of Principal Investigator by Type of Project	A-25
A.15	Approval Rates According to Location of Principal Investigator by Type of Project	A-25
A.16a	Annual Submissions by Location of Principal Investigator (per cents)	A-28
A.16b	Annual Submissions by Location of Principal Investigator (numbers)	A-28
A.17	Amount of Funds Requested, Size of Staff and Planned Duration, by Location of Principal Investigator	A-32

Table		Page
A.18	Specific Substantive Areas by Location of Principal Investigator	A-33
A.19	Research Methods by Location of Principal Investigator (approved projects only)	A-35
A.20	Discipline of the Principal Investigator by Location	A-37
A.21	Proportion of Doctorates Awarded by Schools of Education (1957) and Proportion of Proposals Submitted by Educators (1956-63), According to Selected Educational Fields	A-38
A.22	Level and Control of Institution by Location of Principal Investigator	A-41
A.23	Approval Rates According to Level and Control of Institution, by Location of Principal Investigator . .	A-41
A.24	Quality of Institution (Berelson Scale) by Location of Principal Investigator	A-43
A.25	Approval Rates of Better and Poorer Institutions (Berelson Scale) by Location of Principal Investigator	A-43
A.26	Submissions and Approval Rates: Amount of Funds Requested, Size of Staff, and Planned Duration	A-45
A.27	Approval Rates for Research Proposals, According to Amount Requested and Size of Staff (1956-63) . . .	A-46
A.28	Submissions and Approval Rates: The Group Studied . .	A-48
A.29	Research Methods -- Approved Projects Only	A-48
A.30	Submissions and Approval Rates: Discipline of Principal Investigator	A-49
A.31	Submissions and Approval Rates: Level and Control of the Institutional Setting	A-50
A.32	Submissions and Approval Rates: Quality of the Institution (Berelson Scale)	A-50
C.1	Major Hindrances to Advancement of Educational Research	C-1
C.2	Graduate Schools of Education Named by Deans and Coordinators as Doing the Best Research	C-2

Table Page

C.3 Research Quality According to Various Joint Arrangements with the Liberal Arts and Sciences, Controlled by University Reputation (Keniston) C-3

C.4 Services Performed by Research Units, According to Proportion of Budget Devoted to Research C-4

C.5 Activities on which Unit Directors Spend Most Time, According to Four Styles of Leadership C-5

C.6 Historical Comparison of Activities of University Affiliated Bureaus of Educational Research C-6

D.1 Institutional Affiliations of Authors D-6

D.2 Positions of Authors in University Departments of Education and of Liberal Arts and Sciences D-6

D.3 Association of Authors with Research Units at or Outside of a University, According to Institutional Affiliation of Author D-7

D.4 Field of Specialization of Authors, According to Institutional Affiliation D-7

D.5 Per Cent of Articles Which Were Part of Author's Dissertation or Other Student Work, According to Institutional Affiliation D-8

D.6 Sex of Author, According to Institutional Affiliation D-8

D.7 Number of Co-authors, According to Author's Institutional Affiliation D-9

D.8 Region in Which Author's University is Located According to Institutional Affiliation of Author . . . D-9

D.9 Research Quality of Author's University, as Rated by Deans and Coordinators, According to Institutional Affiliation of Author D-10

D.10 Type of Education Journal in Which Article Appeared, According to Institutional Affiliation of Author D-10

D.11 Substantive Focus of Bureau and Non-Bureau Authors . . D-11

D.12 Group Studied by Bureau and Non-Bureau Authors D-12

Table		Page
D.13	Grade Level Studied by Bureau and Non-Bureau Authors	D-12
D.14	Size of Sample in Studies by Bureau and Non-Bureau Authors	D-13
D.15	Design of Studies by Bureau and Non-Bureau Authors . .	D-13
E.1	Return-Rates for Three Types of Questionnaires According to the Use of Field Representatives	E-18

CHAPTER I

DESIGN AND EXECUTION OF THE STUDY

In planning our study it became obvious that no single technique of data collection would suffice to cover the complex subject matter which we intended to investigate. It also seemed that several techniques had to be used in a somewhat different fashion than is customary. The purpose of this chapter is as much to share with the reader the intriguing research problems which confronted us as to fulfill the conventional requirement that the techniques which serve as the source of new knowledge be carefully delineated.

A. The Problem and Its Background

The chief technical problem was to gain information about an institutional realm whose inputs are not recorded in any systematic way, and to relate this information to various kinds of intellectual outcomes. More concretely, it was a matter of measuring the numerous social conditions which might conceivably impinge on the production of research and of researchers by graduate schools of education. Fortunately, we had for guidance a certain body of literature on the organizational plight of educational research. Although it was a sociological perspective which initiated our study of the social organization of research, we soon discovered that a number of experts had preceded us in focussing on what one writer has called the "logistics" of educational research.[1] Thus, we found that articles had been written on deficiencies in research training, the competing demands of service, teaching, and administration, the need for interdisciplinary work, the lack of facilities and resources, and so forth. In our monograph, Organizing Educational Research,[2] we sought to summarize these impressions of experts and to underscore and elaborate on those problems which we felt to be most critical. At the time, however, "hard" data was very much lacking, and accordingly we subtitled our monograph "an exploration." It is doubtful that our book would have been as wide ranging in its treatment of the organizational problems of research if it had been undertaken as a strictly documented report (or as a project proposal replete with detailed plans for the testing of hypotheses).

With the opportunity provided by substantial U.S.O.E. funds to follow up this exploratory work, we found ourselves in the position of being obliged to substantiate our published hypotheses which -- in the best tradition of hypotheses -- were broad in scope and largely uninformed by systematic research evidence, which at that time simply did not exist. While we were somewhat ahead of the game in having already formulated the major dimensions of the problem, we were also constrained to systematically pursue lines of inquiry which were drawn up in moments of speculative zeal. Only gradually did it become apparent that we had set ourselves a task which was extremely demanding. There are several reasons for the complicated nature of the study.

---

[1] N. L. Gage, "New Directions in Educational Research," paper presented at the New York State Convocation on Educational Research, October 26, 1962.

[2] Paul F. Lazarsfeld and Sam D. Sieber, Organizing Educational Research, Englewood Cliffs, N.J.: Prentice-Hall, 1964. The study reported in this publication was supported by the College Entrance Examination Board.

First, we realized that educational research was conducted within large-scale social organizations whose many features interact in unknown ways on the sentiments and activities of the participants. So, we had to obtain measures of a large variety of formal organizational features -- for examples, size and selectivity of the student body, faculty-student ratios, administrative arrangements for the facilitation of research, relationships with other divisions of the university, financial resources and their allocation, and so forth. Also, we needed to assess the value climate of these institutions as reflected in the distribution of attitudes among the participants. But knowledge of organizational contexts and of the sentiments of the members were by no means sufficient -- we also needed to know what people did and how many did it. Activities related to research training, the structure of influence on goals, styles of intellectual leadership, and extent of collaboration in research are examples of this third type of information. Further, we needed to find out who did these things: their training, research experiences, previous positions held, and so forth. Finally, we needed measures of institutional outcomes, such as research activity, quality of research, and the number of graduates who enter research positions. In sum, there gradually emerged five major classes of needed information: organizational resources and allocative arrangements, value climates, behaviors and interactions among participants, attributes of participants, and institutional outcomes.

But these dimensions comprise only one set of conditions impinging on the current status of educational research, which is also carried on within an historical context. We were acutely aware that particular figures and events had shaped the development of educational research, and that present conditions could not be fully understood without some idea of the main trends that lay behind them. Thus, it was at least necessary to plot the history of research organizations and to relate intellectual developments to the shifting social context of education. In light of the failure of research in education to achieve institutionalization for fully six decades, this task seemed especially vital (and still needs to be performed adequately in its own right).

B. Techniques Employed: Problems and Contributions

The techniques which were finally employed included: questionnaire surveys of education deans, research coordinators, directors of research units, project directors in units, and authors of published research reports; field interviews and observations of selected research bureaus and centers and of the work of professional associations; documentary analysis of materials solicited through the questionnaires; content analysis of school of education catalogues, research articles published in 1964, and research proposals submitted to the Cooperative Research Program, U.S.O.E.; secondary analysis of survey data collected in related studies; and historical library research. And perhaps we should mention too the practice of writing and widely disseminating project memoranda on selected aspects of the study, which yielded valuable feedback from far-flung correspondents. Although not technically a mode of research, the information that was garnered in this way added a good deal to our stock of knowledge. Let us look for a moment at the contribution made by each of these techniques.

1. Questionnaire Surveys

The survey of deans provided information about institutional policies as well as measurements of formal organizational dimensions. The questionnaire for coordinators (and for deans where coordinators did not exist) yielded detailed data about such things as numbers of researchers and field service workers, numbers of collaborative and individual projects, disciplinary composition of teams, financial resources, and research topics under investigation outside of research bureaus. The purpose of collecting information about research outside of bureaus was, of course, to enable us to compare bureau and non-bureau research. Further, since the coordinators were themselves an "arrangement" for facilitating research, we asked them to report their own activities and styles of leadership, how the position was precipitated, who was responsible for setting it up, and how long it had been in existence. Thus, the surveys of deans and of coordinators were designed to serve three purposes: to inform us about the institution as a whole, to inform us about the research activities outside of bureaus, and to give us some idea about the arrangement of "research coordinator."

The survey of directors of research units was intended to cover as many facets of these organizations as could be reported through the eyes of one man -- the director. Policies, leadership styles, functions of the organization, training of students in research, and even some historical data about the bureaus were among the many pieces of information gleaned from these questionnaires. Particularly challenging was the problem of making observations with mailed questionnaires which are ordinarily reserved for field work. For example, a field observer would naturally seek to characterize a director's "style" of leadership. Our task was to invent indicators of "style" which could be used in a questionnaire. The measurement of other global features of the organization posed similar problems in the transference of observational protocols into a questionnaire format -- that is, in developing what we have called the _institutional questionnaire_.

The institutional questionnaire as a research tool for the statistical study of organizations is very poorly developed in the social sciences. Ordinarily, survey researchers have been content to measure the main formal features of organizations. But since our job was to understand the characteristics of _innovations_ in the organization of higher education, _it was not enough to measure characteristics which the innovation shared with other organizations_. For example, the directors of research units are not solely administrators and not solely scholars -- one might rather call them "managerial scholars."[3] How these two statuses are combined to fill the power vacuum between specialists in administration and specialists in scholarship in the university is a subject of considerable import. Because systematic knowledge about this unique status is lacking, we were obliged to explore as many facets of the role as occurred to us. Obviously, the conventional questionnaire which seeks to measure known organizational features was not adequate. Further, in order to treat our data statistically, we could not rely completely upon free-answer questions; and so, the unfocussed, exploratory type of format was not wholly suitable either. We do not lay claim to having solved all the problems which institutional questionnaires pose, but we feel confident in having identified difficulties which few previous investigators have been forced to contemplate.

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[3] The felicitous term "managerial scholar," which serves as the title of Chapter V, was suggested to us by John Blue, U.S.O.E., Dept. of Health, Education, and Welfare.

A special problem growing out of the length and complexity of the questionnaire for deans and coordinators was how to administer this somewhat cumbersome instrument. On the one hand, we felt that interviews would be inappropriate since we needed to collect statistical data that required some time for the respondents to compile; but the length and detail of the questionnaires also made it unreasonable to expect returns by mail, especially since the topic of research arrangements would not seem very pertinent to some deans. Hence, some sort of personal contact seemed necessary. We therefore commissioned junior faculty members (and a few graduate students) in sociology in most of the universities to carry out the following assignment: identify the appropriate respondent, explain the purposes of the study, answer any questions about completion of the questionnaire, obtain the completed form on a return visit, check it over for complete answers, and forward it to our office. In sum, we adopted a method of data collection which lies between interviewing and mailed questionnaires.

As far as we know, no account exists of the issues that are raised by this method of administering questionnaires. And since there is increasing interest among social scientists in the study of large numbers of organizations (and especially in the study of schools) we thought it might be worthwhile to report our experiences with field representatives in some detail. Accordingly, we have discussed this method of field work in Appendix E of the present report.

A second problem which confronted us grew out of our plans to make simultaneous observations of participants at different levels of the organization. Originally we were mainly concerned with studying research units, and particularly their directors. But in order to understand the nature of work in these units, we decided it was necessary to learn a good deal about their environment for two reasons: (1) to see how the character of the larger institution affected the work of its sub-units; and (2) to compare bureau research with non-bureau research. (In the present report, we mainly present our latter observations.) Thus, we had to design questionnaires for deans and coordinators which not only measured the value climate of the schools of education and the policies of deans, but which afforded information of the same sort collected for bureaus. Since research units are relatively small-scale organizations, we did not anticipate any problems in studying their internal ecology. But the collection of the same kinds of information about the much larger environment forced us to be highly selective in choosing items for presentation to the deans and coordinators. And in many instances, the respondents were unable to provide the information requested. As one dean replied who returned an uncompleted questionnaire, "If the purpose of the questionnaire is to determine how much of this type of information the dean of a large school of education has at his fingertips, then the point is well made." In effect, in order to make simultaneous observations of bureaus and their environments, we ran the risk of sample mortality. (Another set of issues concerned the appropriate occasions for relational questions, or questions which refer to relationships among respondents.)

2. Field trips

One way of testing the value of our questionnaires intended for directors of research units was to visit them personally after trying to characterize their organizations and styles of work on the basis of their replies in the questionnaries. Hence, we made several field trips to units which represented a variety of types: Research and Development Centers, institutional research units, informal teams with limited resources, large, well-financed institutes which specialize in an area of research, and more traditional bureaus which are engaged in both research and service. Among other things, we invited the reaction of bureau directors to our typology of formal leadership, telling them where they fell in the typology and then asking them to comment on the validity of the measure. We also presented them with a hypothetical statement concerning the unique intellectual opportunities afforded by the directorship of a research unit, and then solicited their reaction. Another approach employed in the field interviews was to ask questions which were omitted from the questionnaires, but which seemed important for testing certain interpretations of the survey results, which we had already begun to analyse. (Other contributions of the field trips to the analysis of the survey data will be presented below when we discuss the integration of the various techniques.) In sum, the field trips were undertaken to validate and probe the limits of our institutional questionnaire designed for directors of research units.

3. Documentary analysis

The questionnaires were also supplemented by documents of various kinds which we solicited through the questionnaires and through the field representatives. Annual reports of institutes, research reports, histories of schools of education, and vitae on coordinators and directors of research units were the main kinds of materials collected. Also, some institutions made available self-surveys of research activities and placement of graduate students, which documents provided statistical evidence that supplemented pertinent questions in the questionnaires. And of course these materials helped prepare us for our field trips.

4. Content analysis of school catalogues

Another supplemental source of information was supplied by catalogues of schools of education. Rather than expect the deans and coordinators to tell us how many research courses were offered in various divisions of the school -- which was a vital piece of information if we wished to study research training -- we studied the course descriptions in catalogues. This task provided us with measures of opportunities for coursework of various kinds, which we could then compare with the benefits of apprenticeship in our study of the production of "primary researchers" (Chapter VII).

5. Study of research proposals and articles

Since we were primarily concerned with the organization of research, we were constrained to collect most of our information from the leaders of organizations. Having adopted this approach, we stood in danger of missing information about educational researchers at large. Thus, we selected a 20 per cent sample of research propesals submitted to the U.S.O.E. from 1956-63, which was the life span of the Cooperative Research Program at the time our study commenced. By classifying the proposals according to major organizational dimensions (bureau versus independent research, and education versus non-education departments), we were able to extend the scope of our study to the field at large. In addition, we sent a postcard questionnaire to all authors of published empirical research articles appearing in some forty journals in 1964. The postcard inquired whether the author had been a student or a professional, associated with a research unit or not, in a school of education or located elsewhere, mainly engaged in teaching or in research, his specialty, and whether the article was part of his dissertation. We then content-analysed the articles themselves according to topic, methods, the group studied, sample size, and study-design. (All of the questions in the postcard referred to the time when the research was undertaken. Appendix D presents the results of this survey in summary, statistical form. Some of the major findings are referred to in the text of the report.)

6. Previous surveys and historical data

The perusal of previous surveys and of the historical literature gave us a much needed time perspective. As mentioned earlier, educational research has a rather lengthy history. As a matter of fact, some of the research units in our study have existed for almost half a century. These considerations prompted us to seek historical data about the founding and development of research units, and about trends in the activities of these units over the past forty years. Since many of the units which were founded in the past no longer exist, quite clearly we could not rely upon historical questions in our current surveys if we wished to disclose trends among all units which have ever existed in graduate schools of education. Accordingly, we turned to several surveys conducted periodically over the past forty years. When we collected the published reports of these surveys, we found that the investigators had listed the units by name. This suggested the feasibility of computing the birth and death rates of research units. These results also proved of some value, particularly in demonstrating the "marginality" of research units as reflected in their high mortality rate over the years.

The use of past surveys to disclose historical trends is not unusual in the field of public opinion research, although much greater use could be made of this historical technique than has been customary.[4] Our comparison of past social bookkeeping surveys raises the possibility of studying organizational change as well as opinion change in this fashion. If we were able to find four surveys of research units in schools of education conducted since 1927, there is reason to believe that studies of more salient features of the universities exist which could be quite valuable in studying innovations in higher education. (And in addition to these four statistical studies, there were at least two studies of research units in the past ten years based upon field observations and interviews). We are well aware, however, that much more work needs to be done on the design and dissemination of social bookkeeping studies on special institutional topics, as well as on the integration of social bookkeeping with analytical work.

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[4] Paul F. Lazarsfeld, "The Obligations of the 1950 Pollster to the 1864 Historian," Public Opinion Quarterly, Vol. 14, No. 4, Winter 1950-51, pp. 618-638.

C. The Integration of Techniques

The integration of research methods in social science has been hampered by disciplinary boundaries and, within disciplines, by subcultural boundaries which have grown up around various techniques. Survey researchers consider their data more "hard" than the observations of field workers, and the latter consider their data more "rich." Content analysts have persuaded themselves that they are essentially studying the "culture" of a group, and that the social structure of communication or the impact which it has on the reception of communications is of secondary importance. Historiographers regard the techniques of contemporary social science as promoting the collection of "trivia," while social science technicians feel that historians ignore the statistical assumptions which underlie attempts to generalize about human behavior. Sociometrists are more psychologically oriented than any of the methodological sub-groupings mentioned above. Consequently, the opportunity to explore the integration of techniques and to compare their distinctive contributions to a single investigation are exceedingly rare. The topic of methodological sub-cultures is too large to enter into here, but the issues which are raised are as much a part of the culture of social science as the substantive content of various disciplines.

As a consequence of employing a variety of research methods, we gained some insight into the difficulties and the value of integrating techniques. On the problematic side, for example, we were faced with the difficult decision of when to carry out field work. If field work were conducted prior to scanning the questionnaires, we might fail to ask the most pertinent questions of the respondents. But if it were conducted after processing and analysis of questionnaires, there simply might not be enough time to make trips to bureaus, and our observations would not coincide with the period when the questionnaires were completed. (It should be borne in mind that the lapse of time between the execution of a large-scale survey and the perusal of analytical tabulations may range from a few months to as much as two years. In the present study, the design of new questionnaires for successive waves of distribution to different respondents created a gap of almost two years between the first returns from deans and detailed analysis of their responses. Our field work, however, was conducted among directors of research units rather than among deans. The lapse of time between our survey of directors and examination of results was about a year.) We eventually decided to postpone the major field trips until after the surveys had been completed and processed, although a few trips were made for special purposes throughout the duration of the study.

Since field work is almost never done after the completion of a survey, it is quite important to note some of the contributions of this unconventional arrangement. Briefly, the survey data contributed to the field work in the following ways:

identification of the main types of research units provided a sampling frame for the site visits;

puzzling or provocative replies to questionnaires suggested questions for particular interviewees;

statistical relationships and their tentative interpretation helped focus the interviews on certain problem areas;

basic organizational information from the questionnaires made it unnecessary to take up time in the interview or to jeopardize rapport by burdening the interviewee with standard organizational questions;

questions which were omitted from the questionnaire, but which on later reflection or analysis of results turned out to be important, were suggested for the interviews.

The field work, in turn, contributed to our further treatment of the survey data in the following ways:

modifications of existing typologies and indices were suggested;

new interpretations of statistical results were provided, especially with respect to the bearing of historical events on current situations;

the importance of describing the units according to certain major dimensions was borne home by the variegated nature of the units which we visited.

Our study also afforded the chance to integrate historical and survey methods. There were three ways in which surveys added to our historical knowledge. First, as mentioned earlier, we used several past surveys of research units to establish historical trends in the balance between research and service, and to study founding and mortality rates of units. Second, our own questionnaires and interviews were quite useful in obtaining historical data. For example, our case histories of selected research units in Chapter VI were drawn partly from the questionnaires and field interviews and partly from existing documents. Information from these various sources was carefully interwoven for each case history. Further, the main source for our notion of the substantial effect of directors on the development of their units was the questionnaire; and particularly the question:

> Would you briefly describe any highly significant turning points in the course of the unit's history -- for example, the appointment of a new director with different ideas about the program, the influx of new funds, the appointment of a new president or dean, the beginning of an important new research project, etc?

This usage of surveys for historical information, then, was based on questions which specifically focussed upon past events. But there was still a third way in which the questionnaires provided historical data -- through tabulations according to the age of the research units and of the position of research coordinator. By classifying the units according to age, for example, we were able to discern certain trends in organizational types. The interpretations of these statistical trends were then reinforced by information collected in the field interviews about the reasons for changes in policy, and through library research on the development of educational research in general. Interpretations based upon all three of these historical usages of surveys entailed a weaving together of survey results, documentary analysis, and library research.

D. Technical Information about the Distribution and Return of Questionnaires

In obtaining the names of research units and of coordinators, we sent form letters to all deans (or chairmen) of graduate schools (or departments) of education which awarded the doctorate in 1963-64, exclusive of technological schools. There were 107 such schools at that time. The letter, which appears in Appendix B, requested the deans to examine the names of research units drawn from our earlier study and to indicate whether these units still existed, and to list any additional units. (Research units were described as bureaus, institutes, centers, laboratories, etc., affiliated with the graduate program in education and engaged in research.) We also asked for the names of "the Coordinator or Director of the entire faculty research program in education, if such a position exists"; and "the Chairman of any faculty research committee in education, if such a group exists."

All of the deans or department heads responded to this initial form letter. Thirty-eight coordinators who were named by the deans, which included a few committee chairmen where coordinators did not exist, were sent the questionnaires for coordinators. Returns were received from five committee chairmen without coordinators in their schools and twenty-six coordinators or directors of faculty research. For convenience, in the report we refer to these thirty-one individuals who are chiefly or solely responsible for faculty research as "coordinators." The return rate of completed questionnaires for these individuals was 82 per cent.

Two types of questionnaires were designed for deans. If no coordinator existed in the school, then the dean received a long form which included the items in the coordinators' questionnaire; if a coordinator did exist, the dean received a short form which focussed on policy matters, although some statistical information which we felt the deans would be best able to supply was also requested. Of the deans without coordinators, 65 per cent returned useable questionnaires;

of the deans with coordinators, 74 per cent returned useable questionnaires. Thus, our returns represent 68 per cent of all deans or chairmen of graduate schools or departments of education in 1963-64. Since there were eight coordinators who returned questionnaires from schools where deans did not return questionnaires, adding these eight coordinators yields a total of 81 schools of education represented in the study, or 76 per cent of the schools which awarded the doctorate in 1963-64. In view of the length and complexity of the questionnaire, the fact that university administrators are quite busy, and the diligence of our field representatives, we feel that the return rate is quite high.

It is less easy to say what proportion of the directors of "research units" returned questionnaires, since we have no way of knowing how many of the "units" named by the deans were actually doing empirical research, were more than informal teams of investigators, or even existed in more than letterhead form, for that matter. Unless the unit named by the dean was definitely known to us from our earlier study as strictly a service, a clinical, or a teaching facility, we sent a questionnaire to the head of the unit. In all, 133 questionnaires were mailed to directors of units. Eighty-four (or 63 per cent) of the units returned questionnaires or replied by letter. Twenty (or 24 per cent) of these returns proved either not to be research units (but rather clinical, teaching, service, or administrative units) or were found not to be affiliated with the school or department of education. This yielded a total of 64 useable questionnaires from directors of research units in education. An examination of the names of the units which did not respond revealed that virtually all of them were designated as testing, service, study council, laboratory, or counselling facilities. Hence, we feel rather confident in having obtained useable questionnaires from approximately nine out of ten empirical research units affiliated with graduate schools or departments of education. This figure, however, must remain an educated guess.

At least two follow-up letters were sent to each respondent who failed to reply to our initial distribution of questionnaires. In the case of deans and coordinators, field representatives in most of the schools were instructed to make return calls; and in a few cases, representatives who had been unsuccessful were replaced by alternates. (Our experiences with field representatives are reported in detail in Appendix E.)

To sum up, our questionnaire returns represent 68 per cent of the deans or chairmen of graduate schools or departments in education which granted the doctorate in 1963-64; 82 per cent of the individuals chiefly or solely responsible for the faculty research program (which together with the deans represents 76 per cent of the schools); and approximately 90 per cent of the research units affiliated with graduate programs in education. (The questionnaires designed for deans without coordinators, for coordinators, and for unit directors are presented in Appendix F.)

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CHAPTER II

VALUE CLIMATES AND ARRANGEMENTS FOR RESEARCH

Complex organizations make varied demands upon their members, especially when there is a low level of specialization according to the tasks which need to be performed. Organizations also allocate resources in ways which emphasize certain goals while playing down others. Institutional *goals* and *resources* affect both the quality and the amount of effort devoted to various roles. Hence, to understand the barriers to the advancement of educational research, it is not sufficient to pay attention to the intellectual or theoretical content of research, as vitally important as this topic may be. The study of *organizational setting* is at least as important. This point can be made more concrete by an example.

A recurrent theme in this report is the potential and often manifest conflict between the pursuit of different goals within schools of education. While schools vary in the emphasis placed on the functions of teaching, research, and service as obligations of the faculty, virtually all of the schools are responsible in some measure for all three functions. Since the same personnel are often engaged in each of these task-areas, it is obvious that resources and commitments are sometimes strained. When we asked the deans, research coordinators and directors of research units to check what they considered the *major hindrances* to the advancement of educational research, a majority of each type of respondent checked: "Amounts of teaching, administrative, and other non-research duties connected with jobs held by people in education." As a matter of fact, the four hindrances most frequently mentioned by deans, coordinators, and units directors alike were organizational hindrances: financial support, non-research duties, kinds and amount of organization provisions for research, and the quality of research training. The quality of research techniques and the problems chosen for investigation -- two major intellectual shortcomings -- followed fifth and sixth in order of frequency of citation as major hindrances. (Appendix C, Table 1, shows the proportion of respondents who checked each of fifteen possible hindrances.)[1] Many of the administrative arrangements for the conduct of research are called into being precisely for the purpose of aiding research in its competition for scarce resources. Research bureaus, for example, are often conceived as functional alternatives to teaching departments as locales for research. The practice of reducing teaching loads or of granting leaves of absence for research is also aimed at protecting the researcher from the intrusion of other duties. Even the formal relationships which professional schools establish with the liberal arts and sciences may be viewed as mechanisms for safeguarding the integrity of scholarship within a context which requires the pursuit of more immediate professional goals.

We would not wish to overemphasize the conflictual aspect of the situation in this illustration of the important bearing on research of the organizational context. Indeed, it is often claimed that teaching, research, and service roles are mutually augmentive. This is an important question which can only be settled by empirical inquiry. (The alleged contribution of field service to research will be discussed in Chapter VI where we explore the interaction of service and research in some detail. And the integration of teaching and research will be touched upon in a later portion of the next chapter.) But the reason for raising these points here is to remind the reader that the goal of producing significant educational research has to be examined within an institutional setting which contains other goals and which has limited resources at its disposal.

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[1] The hindrances presented in this question were formulated by David E. Wilder on the basis of extensive field work carried out in connection with the Carnegie study of reading experts. See "The Reading Experts: A Case Study of the Failure to Institutionalize an Applied Science of Education," (Ph.D. dissertation, Columbia, 1966.)

The objective of this and the following chapter is to familiarize the reader with the main organizational features of schools of education which affect the performance of research. The present chapter is mainly concerned with innovations which are directly related to the promotion or facilitation of research; while the following chapter will focus on major institutional mechanisms which may be used in such a way as to benefit the research program, namely, recruitment and relationships with departments outside of education. In the course of introducing these features, we shall refer to subsequent parts of the report where we deal with selected issues in more detail. Thus, the two chapters will also serve as a sort of Baedeker for the remainder of the report.

The present chapter begins with a discussion of the distribution of goals and of influence upon goals among various groups associated with the university. Next, we describe the array of administrative arrangements for the promotion and conduct of research. Because we take up the subject of research units in considerable detail in Chapters IV and V, we shall not presently have much to say about this particular arrangement. A good deal of attention will be paid to the new role of faculty research coordinator, however. The chapter is rounded out with a brief discussion of the deans' and coordinators' plans and dreams for further development of research.

A. Value Climates -- The Distribution of Goals and of Influence on Goals

The statuses responsible for the governance and performance of professional roles in schools of education differ widely in their emphasis on educational research as an obligation of the faculty. Most often it is the dean of the graduate faculties who ranks research above teaching or service, and least often it is the faculty of education. These conclusions are based on the replies of the deans of schools of education to the following question:

> Graduate schools or departments of education vary according to the rank order of field service, teaching, and research as responsibilities of the faculty. There may also be disagreement within the same school about the relative emphases that should be placed on these activities. To the best of your knowledge, how would the groups listed below rank the three activities in your school?

(We informed the respondents in a brief note that the term "research" was being used here to signify "empirical research," as distinguished from "field services and library research.") Subsequently, we asked the deans to identify the groups which exercised most influence in the institution's current balance of emphasis between the three functions:

> There are many forces, both inside and outside schools of education, which shape their goals. In your judgment, which of the following groups most affected the balance of emphasis between teaching, field service and research in your institution, either directly or indirectly, during the past five years? (Please check no more than five.)

The groups which were listed in these two questions, together with the replies of the deans, are presented in Table 2.1. We have ranked the groups according to the formal hierarchy of authority, beginning with the trustees and moving down through the hierarchy to the faculty members. In the lower part of Table 2.1 we have added public school systems and funding agencies outside the university.

What is quite clear in the left-hand column of Table 2.1 is that groups at the top and at the bottom of the hierarchy de-emphasize research. Thus, the faculty is as little likely as the trustees of the university to give top priority to research. The deans of the graduate faculties most often emphasize research as the primary function of the faculty of education (50%), while the deans of education follow second (31%). But education deans are a poor second to graduate deans in placing research ahead of teaching and field service. What needs most to be underscored in this table, however, is that the group which is responsible for carrying out projects, i.e., the faculty, is the least likely to regard research as a primary obligation.

Obviously, there is a good deal of dissensus between education deans and their faculties. The great majority of deans who do not give research top priority feel that it is secondary only to teaching. (Fifty-seven per cent of all deans rank research second to teaching, with field service third.) The favorable attitudes of education deans towards an expansion of research can be shown in other ways. In our questionnaires for deans and for research coordinators, we asked the respondents to check the topics in which they would like to see more research done in the school of education. (The twenty-four topics included in this list will be presented and discussed at the close of

TABLE 2.1

Emphasis on Research by Various Groups, and the Influence Which They Have on the Goals of the School (according to deans)

Groups within the university	% Schools (reported by deans) a. Where each group sees research as the primary goal	 b. Where each group influences the balance of emphasis on goals
Trustees	9%	1%
President	28	51
Graduate faculties dean	50	36
Education dean	31	32
Educational dept. chairmen	19	51
Education faculty	8	85
Groups outside the university		
Public school systems	3	32
Funding agencies outside the university	73	47
No. of deans:	(74)	(74)

the following chapter.) Comparing the average proportion of deans (in schools with coordinators) who checked each of the topics with the average proportion of coordinators who checked the topics, we find that *the deans exceed the coordinators in their desire for more research*. A mean proportion of *67* per cent of the deans and *46* per cent of the coordinators checked each of the topics on which more research was desirable. Since the coordinators are specifically entrusted with the promotion of research within the school of education, the fact that a greater proportion of *deans* desire more research on the various topics testifies to the latter's unusually high level of commitment. Moreover, when we asked the deans about the number of faculty members currently doing research and the number they would like to be doing research, we found that *the deans wish to* ~~[illegible]~~ Almost *double the number of researchers in their schools*. (The mean number of current researchers is about eleven per school, while the mean number desired is about nineteen.) But strong conviction without influence does not make for social change. Let us therefore turn to the equally important question of *who has the power* to determine the structure of goals in schools of education.

A comparison of the distribution of *influence* (right-hand column of Table 2.1) with the distribution of favorable *attitudes* towards research (left-hand column) provides us with an important clue to the question of why research in schools of education seems to be lacking in vitality. With the exception of the trustees, *those who least often emphasize research most often have the power to determine the balance of emphasis among goals*. The president of the university, the education chairmen, and the education faculty *least* often place research in the first rank, but *most* often have the power to set the goals of the schools. The dean of the graduate faculties and the education deans -- the authorities who most often emphasize research -- least often have any influence (again with the exception of the trustees).

If the picture of goals and of influence drawn for us by the deans is accurate, it appears that it is the faculty members in education who are mainly responsible for the secondary or even tertiary position of research in many schools of education. It may be that because faculty members are closer to students and to local school systems, they tend to be more concerned with serving the immediate needs of these clientele. It might also be true that faculty members who are committed to research are selectively recruited into administrative positions. Since the graduate faculty deans most often rank research first, it is reasonable to assume that individuals who shared this outlook would often be appointed deans of education. The education deans, in turn, might select chairmen who share their outlook. This would explain the ascending frequencies of chairmen, deans, and graduate deans who emphasize research. In other words, what may be happening is that scholars in education are drained off into administrative positions in much the same way that outstanding teachers in the public schools are attracted to administrative jobs. And, of course, the higher the position in the university hierarchy, the less frequent the association with students and with professional clientele in school systems. Thus, those scholars who become administrators are reinforced in their emphasis on research by insulation from the immediate needs of individual students and of practitioners.

The extent to which public school systems are said to place primary emphasis on research as a faculty responsibility is also shown in Table 2.1. Almost none of the deans claim that the public schools rank research first (only two deans made this claim). More than half of the deans (56%) maintain that the public schools rank teaching first, service second, and research third in order of importance. Further, about a third of the deans indicated that school systems exert a major influence on the goals of the professional school. Another important source of the de-emphasis on research, then, resides in the expressed needs of public school practitioners for professional training and services. This problem area will be discussed in detail in Chapter VI.

No doubt one of the major counterbalances to the downgrading of research by faculty members is the funding agency outside the university. As shown in Table 2.1, these agencies are widely recognized as principally concerned with the promotion of research (73 per cent of the deans so responding); and they are also widely regarded as exerting influence on the schools of education to move the balance of emphasis towards research (47 per cent of the deans so responding). When we examine the effect of federal funds on the research orientation of bureaus in Chapter IV, we shall see that the deans' view of the importance of funding agencies is quite accurate.

The goals emphasized by various groups within the university is by no means an irrelevant issue, for the value climate of schools of education is a fairly accurate predictor of the quality of the research which is turned out. In order to gain some notion of the quality of research performed in the schools, we asked the deans and coordinators to name schools or departments of education in the nation which they considered to be doing "the most worthwhile and competent research."[2] Table 2.2 shows the proportion of schools designated as doing the best research according to an emphasis on research as a primary faculty obligation by each of six groups in the university. (Because the respondents tended to name the larger schools, which obviously have an advantage in producing at least a few pieces of outstanding research, we show the same information for large schools only, i.e., schools with forty or more faculty members. Only two of the smaller schools were named as doing the "best research," and therefore we need only observe the larger ones. And because of the possibility that the respondents were biased in their judgments towards the more "reputable" universities, we also show the relationship between research quality and research emphasis in the better universities only, according to the Keniston scale.)

Consistently we find in Table 2.2 that *the quality of research produced by the school of education is higher when each group considers research to be the primary obligation of the faculty*. The two exceptions

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[2] A listing of the schools named, together with the number of choices each received, is presented in Appendix C, Table 2. The schools named as producing the best research have enjoyed a higher approval rate for proposals submitted to the U.S.O.E. in 1956-63 (30 per cent of the proposals from the "best" versus 17 per cent from the other schools of education were approved). The schools designated also tend to be located in the "better" universities, as measured by the Keniston scale of university reputation. (Hayward Keniston, Appendix, "Standing of American Graduate Departments in the Arts and Sciences," in *Graduate Study and Research in the Arts and Sciences at the University of Pennsylvania,* Philadelphia: University of Pennsylvania Press, 1959. These facts lend validity to our measure of research quality. And since many of the deans and coordinators have taught courses in research methods, and almost all the coordinators are presently doing research, there is reason to believe that the respondents are fairly discriminating in their judgments.

TABLE 2.2

Research Quality According to Emphasis on Research by Various Groups

	% Schools of Education Doing Best Research		
	Of All Schools (1)	Of Large Schools Only* (2)	In Best Universities Only (3)
Schools Where Deans Report:			
Trustees Emphasize:			
Research	43% (7)**	100% (3)	67% (3)
Other	18% (57)	41% (22)	67% (9)
President Emphasizes:			
Research	30% (20)	67% (9)	83% (6)
Other	18% (45)	35% (17)	57% (7)
Dean of Graduate Faculties Emphasizes:			
Research	27% (37)	56% (18)	100% (8)
Other	14% (28)	33% (9)	25% (4)
Dean of Education Emphasizes:			
Research	39% (18)	70% (10)	71% (7)
Other	18% (51)	35% (17)	71% (7)
Chairmen in Education Emphasize:			
Research	43% (14)	86% (7)	100% (5)
Other	11% (46)	24% (17)	40% (5)
Faculty in Education Emphasize:			
Research	50% (6)	100% (3)	100% (3)
Other	16% (61)	35% (23)	56% (9)

*Forty or more faculty members.

**Numbers in parentheses represent the bases of the percentages.

to this conclusion -- trustees and education deans in the "best universities" -- are not sufficient to contradict the generalization since the number of cases is quite small in these categories. We see, then, that the value climate is an important feature of the organizational context of research. Now let us turn to a consideration of several administrative arrangements for facilitating research.

B. Arrangements for the Facilitation of Research

Educational research in professional schools is facilitated in a variety of ways. A researcher may be a staff member of a research unit (bureau, center, office, etc.), or he may use the facilities of some such unit without joining the staff. Others may have no connection with research units whatsoever. According to our analysis of the sources of research proposals (Appendix A) and our study of research authors of 1964, this latter group comprises about three-fourths of the educational researchers in the universities. Such persons may be facilitated by faculty research committees, by research coordinators, or by several administrative provisions, such as released time from teaching, leaves of absence for research, and sabbaticals.[3]

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[3] Eighty-three per cent of the schools reduce teaching loads so that research can be carried out. In schools where this practice is followed, however, a mean proportion of only 8.6 per cent of the faculty per school has the equivalence of full-time reduction of teaching load for research. In addition, 23 per cent of the schools exempt researchers from administrative duties, and 88 per cent provide leaves of absence without pay for research. In a third of the schools which provide leaves of absence, however, none of the faculty has taken advantage of the provision in the past five years. Obviously, the sheer existence of these arrangements does not guarantee their utilization.

According to information obtained from the deans and department heads in a survey conducted in 1963 preliminary to the design of our larger survey, 24 per cent of the schools have a research committee or council and 37 per cent have a coordinator for faculty research. According to our later survey of deans and coordinators (1964-65), 47 per cent have research units. Only 30 per cent of the schools have neither coordinators, committees, nor research units. Moreover, a number of schools have more than one of these arrangements. For example, half of the schools with coordinators also have committees which are concerned with the promotion of research. Similarly, about half of the schools with research units also have either coordinators or committees. It is in the larger schools where a good deal of research is underway, of course, that we tend to find more than one of these arrangements. In short, the great majority of schools of education contain some arrangement for facilitating or conducting research.

Perhaps the least familiar of these arrangements is the faculty research coordinator. This position is relatively new in schools of education, since almost two-thirds of the schools with coordinators have established the position since 1960. Because of the novelty of the position and its possible impact on the future development of educational research, it is important to examine it in some detail. Also, since a good deal of our information about schools of education was derived from questionnaires especially designed for coordinators, it is advisable to introduce the respondent to the reader.

1. The Research Coordinator

The coordinator occupies a fairly secure position within the university hierarchy. More than a third (36 per cent) are associate or assistant deans, and about the same proportion are full professors (39 per cent). The remaining 25 per cent are associate or assistant professors. The coordinators also tend to be scholars in their own right, since almost all are currently conducting research (87 per cent), and more than half have a Ph.D. rather than an Ed.D. degree (52 per cent). In short, in addition to their duties as coordinator, they are also frequently administrators, teachers, and researchers.

Table 2.3 shows the frequency with which the thirty-one coordinators in our study signified that they performed each of a variety of tasks. For greater clarity, we have grouped these tasks into four types: administrative responsibilities, intellectual leadership, communication, and stimulation of research. (In Chapter V we compare the directors of research units with the coordinators on this same set of responsibilities. In general, the unit directors perform more roles than the coordinators, but they also spend half again as much time in carrying out the duties associated with their position.)

Most often the coordinators said they were responsible for "assisting faculty members in writing proposals," a task which we have classified under stimulation. (The justification for classifying this activity as "stimulation" will become clear later on.) About the same proportion mentioned "encouraging faculty members to undertake research which is of general interest to scholars in education" (74 per cent), which is obviously a stimulative role. In sum, the two roles most

TABLE 2.3

Activities of Faculty Research Coordinators

	% Coordinators
Stimulation	
Assisting faculty members in writing proposals.	81%
Encouraging faculty members to undertake research which is of general interest to scholars in ed.	74
Encouraging faculty members to undertake research which is of immediate help to schools.	52
Communication	
Facilitating communications among researchers.	71
Communicating the needs of the research program to the administration.	68
Collecting and disseminating information about financing of research.	58
Intellectual Activities	
Judging the adequacy of research proposals.	58
Providing opportunities for students to participate in research.	55
Assisting faculty members with analytical problems which arise in their research.	48
Formulating the goals of a research program.	32
Administrative Activities	
Gaining the assistance of scholars in other departments in the university in planning or executing research.	45
Seeking funds for researchers.	39
Providing the facilities (other than funds) for researchers.	39
Securing new staff members to do research.	26
Allocating university funds for research.	26
Handling requests for released time to conduct research.	26
Directing or facilitating service studies for schools in the area.	26
Allocating outside funds for research.	3
Number of coordinators:	(31)

often performed by the coordinators are geared to the promotion of research activities rather than to the guidance or support of on-going research. As a matter of fact, less than half the coordinators assist faculty members with "analytical problems which arise in their research" (48 per cent), and only a third are involved in "formulating the goals of a research program." Further, when we asked the coordinators about the three activities which absorbed *most* of their time, only 13 per cent mentioned assistance with analytical problems and only 10 per cent mentioned formulating the goals of a research program. Half of them, however, said that they spent most of their time helping faculty members write proposals. In short, *the intellectual leadership of the coordinators is very largely confined to the phase of getting research underway.*

These observations afford insight into one of the major reasons for creating the position of research coordinator, namely, to encourage faculty members to undertake basic research who are not particularly experienced or who may not be especially enthusiastic about the prospect. Thus, the coordinator is expected to overcome some of the major obstacles to research in schools of education.

There is a second type of coordinator, however, as shown by the frequency with which the *managerial* function was mentioned as a reason for creating the position. When we inquired of the circumstances which led to the creation of the position, several of the coordinators mentioned the need to *manage* a burgeoning research program. Here are some illustrative replies:

> Conviction on part of administration that university's research program had grown to size where coordination and some research management were desirable.
>
> Need for coordination and administration of an educational research effort . . .
>
> Need for coordination and articulation of the increased research by faculty . . . Liaison with other departments and agencies.
>
> Increase in size of Graduate Department and need for standardization of academic and administrative process in the several graduate divisions.

There is little question but that coordinators are performing some roles which are not performed by deans. Table 2.4 presents the replies of coordinators and of deans without coordinators to the following question:

> Under which of the following circumstances, if any, have you ever intervened in an on-going study?

In Table 2.4 we have grouped the circumstances into intellectual and administrative interventions. And it is clear that the deans are more often involved in the traditional administrative roles of handling budgetary and personnel problems, while coordinators are more often concerned with meeting needs which are distinctive of research, namely, passing on information and helping in the analysis of data. Although coordinators are chiefly restricted to stimulating and planning research rather than monitoring existing projects, this situation seems preferable to that which prevails where no coordinator exists. Incidentally, we also see in Table 2.2 that as many as 39 per cent of the coordinators have "practically never" intervened, compared with 28 per cent of the deans without coordinators. The greater amount of intervention on the part of deans may be explained by the smaller faculty size in schools without coordinators, by the greater authority of the

TABLE 2.4

Circumstances under Which Coordinators and Deans without Coordinators Have Intervened in Projects

Intellectual Interventions	% Coordinators	% Deans without Coordinators
You passed on information which seemed valuable to a study	57%	44%
An investigator was having difficulty analyzing his data	32	26
Administrative Interventions		
A project was having budgetary problems	25	51
A project was having personnel problems	21	42
A study was failing to meet its deadline	14	23
A sponsor or client was worried about the progress of a study	11	9
Practically never intervened, regardless of circumstances	39	28
Number of respondents	(28)	(43)

deans, or by the fact that the deans more often deal with administrative rather than intellectual matters.

Unfortunately, the coordinators do not seem to receive much institutional support in the performance of their tasks. Three-fourths do not have any full-time professional assistance, and only slightly more than half have part-time professional assistance. On the average, the coordinators spend only about half of their university time on all the activities associated with the position. Finally, and perhaps most significant, *only about a third have any funds earmarked for the job*. But these limitations do not seem to have dampened their enthusiasm, for when we asked them if they would be interested in "joining an association of university educational research coordinators" (providing such a group were created), three-fourths expressed approval of the idea. A few others said they would be willing to participate in some such group if it were part of an existing professional association. In short, the coordinators seem eager to air their problems with colleagues elsewhere, which may be a token of their professional commitment to the job. Now let us try to see what impact the coordinators have had on their institutions.

It is not easy to say how successful the coordinators have been thus far, and it is probably too early to pass judgment. At the present time it seems that the position has neither stimulated *more* faculty research nor improved the *quality* of the research produced. Table 2.5 shows the mean proportion of faculty members per school engaged in research, and the proportion of schools which were named as doing the best research, according to whether a coordinator now exists and how long the *position* has existed.

Far from there being a positive relationship between the *existence* of the position and the proportion of faculty doing research, there is a distinctly *negative* one. This finding is probably explained by the practice of appointing coordinators in schools where research is underemphasized. But even where coordinators exist, quantity of researchers is not related to the length of time the position has existed. In short, we are unable to demonstrate the impact of coordinators on the amount of research undertaken.

TABLE 2.5

Mean Proportion of Faculty Doing Research (Outside Bureaus), and Research Quality, According to the Existence of a Coordinator

	No. of years coordinator position has existed		
	None (no coor.)	1 - 3	4+
Mean % of faculty doing research outside of any bureau:	32%	27%	22%
No. of schools reporting:	(36)	(9)	(9)
% schools named as doing the "best research":	15%	28%	25%
No. of schools reporting:	(46)	(18)	(12)

When we turn to the quality of research done (also Table 2.5), we now find that schools with coordinators were more often named as producing the best research, but that once again the length of time the position has existed is not related to research quality. In conclusion, we are unable to find evidence that so far the coordinators have affected either the quantity or quality of research in schools of education.

Since coordinators are sometimes conceived as alternative arrangements to research units, it is instructive to compare these two arrangements on our measure of research quality. In Table 2.6 we show the proportion of schools which were named as doing the best research according to whether a research unit exists; for purposes of comparison, we repeat the preceding table showing the relationship between

TABLE 2.6

Research Quality of Schools of Education According to the Existence of a Coordinator and the Existence of a Research Unit

	% schools doing best research	
Coordinator exists	Of all schools	Of large schools only*
Yes	28% (35)	47% (15)
No	15% (46)	38% (16)
% diff. =	+13%	+9%
Research unit exists		
Yes	31% (35)	47% (15)
No	13% (40)	42% (12)
% diff. =	+18%	+5%

*Forty or more faculty members

quality and the existence of a coordinator. It appears that the existence of a *research unit*, unlike the existence of the coordinator, is virtually unrelated to research quality when we control for the *size* of the faculty. But here we need to make an important qualification, for research units are not necessarily engaged only in *research* -- many of the units in our study provide services for local schools, and about a third are *chiefly* devoted to the provision of services (as indicated by the proportion of the budget divided between these two activities). Hence, we need to sort out the units which are mainly devoted to research. And when we do so, we find a substantial relationship between the existence of such a unit and the research quality of the school. As shown in Table 2.7, even after controlling for size of the faculty, schools of education with units which are predominantly devoted to research are much more likely to be designated as doing the "best research" than schools without such units. In short, it appears that the research unit is a mode of organizing research which is in general preferable to the faculty research coordinator.

TABLE 2.7

Research Quality of Schools of Education According to the Existence of a Unit Which is Mainly Devoted to Research (in Large Schools only)

Research-oriented bureau exists: (50%+ budget for research)	% of large schools (40+ faculty) doing best research	
Yes	59%	(17)*
No	36%	(11)

*This base number is not the same as in Table 2.6 for the following reason: in Table 2.6 (all bureaus) we used the coordinators' replies, and in Table 2.7 (research-oriented bureaus only) we used the replies of unit directors. The size of the faculty was determined through the dean's questionnaire. There were two coordinators who did not reply in schools where both the dean and a unit director replied. Hence, the base numbers vary by two cases.

This does not mean that in certain schools it might not be advisable to have a coordinator to stimulate the apathetic and to protect the productive.

Probably one reason why coordinators do not more often affect the quality of research output is that the attitudes of their colleagues and even of their superiors do not afford the backing which they need in the job. In a sense, this is the coordinator's inevitable burden, for the very existence of a position which is dedicated to promoting research implies that there are obstacles to research in the given setting. And one of the main obstacles, as suggested earlier, is the value climate of the school. Thus, we find that *coordinators exist only in schools where the faculty ranks either teaching or field service above research*. There are no coordinators in the six schools where the faculty was said to place research first, while 40 per cent of the remaining schools have coordinators. As a matter of fact, in most cases the existence of a coordinator is *negatively* related to an emphasis on research by each group listed in our question concerning goals. (The two exceptions are the deans of the graduate faculties and the trustees of the university. If the graduate faculties Deans or the trustees give research top priority, then we are *more* likely to find a coordinator.) These facts can be seen in Table 2.8, which shows the proportion of schools with coordinators according to whether each group emphasizes research as the main obligation of the education faculty.

The tendency for coordinators to be found in schools which do not strongly emphasize research is most clearly seen in Table 2.9. Here we have simply *summed* the number of groups mentioned by the deans as placing research first in order to obtain an *Index of Research Emphasis*. Clearly, the *lesser* the emphasis on research, the greater the likelihood of our finding a coordinator on the premises. In sum, coordinators are not operating in social climates which strongly endorse research. It seems that in order to be a missionary, one must have a mission.

Here, then, is one reason that coordinators have not had greater impact on the quality of research output. If this interpretation is correct, then we should find that the existence of a coordinator

TABLE 2.8

Existence of a Coordinator, According to Emphasis of Various Groups on Research

	% Schools with Coordinators	Number of Schools
Schools where deans report:		
Trustees emphasize:		
Research	43%	(7)
Other	32%	(59)
President emphasizes:		
Research	24%	(21)
Other	40%	(45)
Dean of graduate faculties emphasizes:		
Research	32%	(25)
Other	26%	(17)
Dean of education emphasizes:		
Research	25%	(12)
Other	43%	(31)
Chairmen in education emphasize:		
Research	21%	(11)
Other	40%	(29)
Faculty in education emphasizes:		
Research	0%	(6)
Other	40%	(36)

TABLE 2.9

Existence of a Coordinator According to the Index of Research Emphasis

Index of Research Emphasis (No. of groups which rank research first)	% schools with coor.
High (4+)	26% (23)*
Med (1-3)	39% (41)
Low (0)	62% (8)

*Numbers in parentheses are the bases of percentages.

is more highly related to research quality in schools where other participants strongly endorse research. And this is indeed what we do find. As shown in Table 2.10, where there is an emphasis on research on the part of the trustees, the president, the dean of education, or education chairmen, there is a stronger relationship between the existence of a coordinator and research quality than where these groups do not emphasize research.

In light of these findings, it is especially unfortunate that coordinators are seldom provided with the wherewithal to carry out their mission. Also, it seems apparent that the position is not really an alternative to the research unit, for each arrangement is engaged in a different kind of activity. Research units facilitate and conduct research in settings where research is valued, while coordinators try to get research started in settings where research is undervalued. The latter arrangement, therefore, seems more appropriate for schools which lack a tradition of research. Clearly, it is too early in the game to assess the impact of faculty research coordinators. A similar

TABLE 2.10

Research Quality, According to Emphasis on Research by Various Groups and the Existence of a Coordinator

	% schools doing best research		% diff.
	Coordinator exists		
Schools where deans report:	Yes	No	
Trustees emphasize:			
Research	67% (3)	25% (4)	+42%
Other	26% (19)	13% (40)	+13%
President emphasizes:			
Research	60% (5)	19% (16)	+41%
Other	28% (18)	11% (27)	+17%
Dean of graduate faculties emphasizes:			
Research	33% (12)	20% (25)	+13%
Other	23% (13)	6% (17)	+17%
Dean of education emphasizes:			
Research	75% (4)	25% (12)	+50%
Other	26% (23)	13% (31)	+13%
Chairmen in education emphasize:			
Research	67% (3)	27% (11)	+40%
Other	21% (19)	3% (29)	+18%
Faculty in education emphasizes:			
Research	- (0)	50% (6)	-
Other	29% (24)	8% (36)	+21%

study five years hence would be in a better position to evaluate the impact of this important innovation in the universities.

2. Research Committees

Research committees also vary in their functions. Since we were interested in research committees only insofar as their work related to that of the coordinators, we asked only the coordinators about the work of any existing committee; for this reason our information is very limited. Still, variation of function is clear even from our small sampling of twelve committees. The two major types seem to be the policy committee, which advises the administration on needed policies related to research, and the facilitating committee, which advises faculty members who are preparing research proposals and performs other promotional roles. The coordinator's descriptions of committees show that these two types are fairly distinct:

Policy committees

> The Research Council is advisory to the President on research policies.
>
> Committee is advisory in nature. Decide policy on faculty research proposals submitted for local support.
>
> The Committee serves as a communication link between the Dean's office and the faculty members in departments on research matters.

Facilitating committees

> The committee has the major responsibility for fostering and aiding research by faculty.
>
> The committee encourages research efforts through symposia, and other similar types of programs. Theoretically, the committee has no responsibility for the faculty research program of the college. Responsibility and accountability for faculty research reside in the office of the assistant dean.

> Committees are usually formed to advise with faculty members who are preparing research proposals. They serve like members of a doctoral seminar reviewing a dissertation.

On occasion, however, these two types of functions are combined within a single committee. The Committee on Educational Research, University of Michigan, is a good example of this type of omnibus committee. As stated in the by-laws of the University:

> The purposes of the Committee on Educational Research shall be to encourage faculty members to do research; to assist faculty members with their research activities; to identify major foci of research appropriate to the interests of the School of Education; to provide general direction to the Office of Research Service; to develop guide lines for efficient and effective processing, managing, and coordinating of research; to represent the interests of research in the management of the School; and to explore and assist in the development of cooperative research efforts with other colleges, universities, and public school populations. (From material returned with the questionnaire)

This particular school of education also has an agency called the Office of Research Service, whose director filled out our questionnaire intended for coordinators. The Office serves as the executive arm of the Committee:

> The Office of Research Service shall work under the direction of the Committee on Educational Research. Its responsibilities shall be to provide consultation for faculty members and graduate students on matters of research design; to assist faculty members in the preparation and submission of research proposals to fund-granting agencies; to help design and coordinate the curriculum relating to the research preparation of graduate students; to assist in providing training opportunities for graduate students in the use of research equipment; to inform the Committee on Educational Research and the faculty on state and national research developments and legislation affecting research in education; to represent the Committee on Educational Research, at its request, on state and national committees; and to act in a liaison capacity on matters of research between the Committee on Educational

> Research and other research units of the University. The Chief of the Office of Research Service shall be appointed by the Dean and the Executive Committee to serve on a year-to-year basis. (From the new by-laws enclosed in the questionnaire)

In sum, research committees may combine a number of functions which do not preclude articulation with the work of faculty research coordinators.

C. Organizational Plans and Dreams

Although it is never an easy thing to prophesy about complex organizations, our questionnaires designed for deans and for coordinators touched on future plans and prospects, and their replies afford some leads about future developments. We have already seen that the deans wish to almost double the number of persons doing research in the school of education. Moreover, most deans believe that the expansion in the number of researchers which they indicated as desirable would actually take place in their institution. When we asked, "Do you believe that the proportion of faculty members doing research outside of any bureau will shift to what you regard as desirable in the next three years?" 70 per cent responded in the affirmative.

It is, of course, possible that the deans are unrealistically sanguine about the prospect of increasing the supply of researchers, at least in the near future. The fact that the number of research proposals submitted to the U.S.O.E. by applicants located in schools of education remained fairly stable over the years 1956-63 (Appendix A, pp. 27-28) suggests that many of the deans may be indulging in wish-fulfillment when they say that they anticipate a near doubling of researchers in their schools. Obviously, one of the major factors is the continued availability of research and development funds from the federal government. For many years the lack of funds for educational research was undoubtedly a serious handicap. As a matter of fact, when we asked the deans to check what they considered to have been the major hindrances to the advancement of educational research from a list of fifteen possible difficulties, they most often mentioned the amount of financial support available for research. Two-thirds of the deans mentioned this problem (Appendix C, Table 1).

The importance of financial resources can be clearly shown by comparing what the respondents plan to do with what they would do with a large sum of money. This comparison is made possible by the following two questions, which were asked of deans and coordinators:

> (1) Please describe any changes in the research program of the graduate school or department of education which are planned for the future. (In order to project future developments in the nation, we need to learn about specific intentions. We would therefore appreciate your giving careful attention to this question.)
>
> (2) If your school or department of education were to receive about $200,000 for facilitating or conducting educational studies, or for preparing researchers, how would you like to see these funds used?

By comparing the replies to these two questions, Table 2.11 indicates the extent to which deans and coordinators would spend new money on certain items which otherwise would not come into being.

In the first place, almost every item was more frequently mentioned when $200,000 was in the offing -- with one notable exception.

TABLE 2.11

Future Plans of Deans and Coordinators, and How They Would Allocate $200,000

	Deans without Coordinators		Coordinators	
	Plans to do	Would Do with $200,000	Plans to do	Would Do with $200,000
Staff				
Hire new staff or consultants	30%	41%	19%	36%
Support existing staff				
More research	55%	64%	33%	60%
Re-allocation of duties	18%	13%	5%	20%
New administrative arrangements				
Coordinator of research	3%	8%	--	--
Research unit	36%	15%	43%	24%
Training of students				
Fellowships, stipends, etc.	6%	23%	10%	60%
New training program	3%	15%	--	12%
Other	3%	18%	--	8%
All other	27%*	13%	33%*	12%
	181%	210%	143%	232%**
	(33)	(39)	(21)	(25)***

*Most respondents in this category said they would seek more funds.

**Total percents exceed 100% due to multiple responses.

***Respondents who did not answer the questions are omitted from the bases of percents.

Many of the schools plan to support or create a research unit; but given more money, they would do something else. This observation holds for both deans and coordinators: 36 per cent of the deans plan to support a research unit, but only 15 per cent would do so if they had a great deal of money; and 43 per cent of the coordinators report plans to support a research unit, but only 24 per cent would do so if they had more money. What these results suggest is that present plans for supporting a research unit do not entail a substantial outlay; for when money is available, this item would take lower priority.

The innovation which takes much higher priority when a hypothetical sum is offered is research training for graduate students. The costliness of this item is shown by the fact that very few deans or coordinators (12 per cent and 10 per cent, respectively) planned to improve research training at the time of our survey. But when funds were hypothetically offered, a majority of deans and coordinators mentioned the improvement of training. It will be recalled that our questionnaires were completed prior to inauguration of support for research training programs by the U.S.O.E. in 1965. In light of the widespread desire to spend money for training in research, it is not altogether surprising that the $8 million allocated for the program in the first fiscal year was exceeded by $2 million in applications for funds.

No doubt the new and increased funding programs of the U.S.O.E. have largely answered the pleas of professional leaders for greater support for research and development in general. As a matter of fact, even at the time of our survey two years ago, two-thirds of the schools were receiving research support from the Cooperative Research Branch, U.S.O.E. No other single source of support was utilized as widely. The proportion of schools with research funds from various sources is shown in Table 2.12. Both inside and outside of research units, the Cooperative Research Branch far exceeded other sources of funds in frequency of utilization.

TABLE 2.12

Sources of Support for Research Inside and Outside of Research Units

	Location of Projects	
Sources of support	Outside units (% schools)	Inside units (% units)
Cooperative Research Program, U.S.O.E.	67%	66%
National Defense Education Act	45	26
National Institute of Mental Health	38	28
National Science Foundation	35	21
Ford Foundation	35	21
Kellogg Foundation	18	6
Carnegie Corporation	10	6
All other sources	38	32
No. of units or schools:	(60)	(54)

But the federal expansion of research support has not been an unmixed blessing in the view of university administrators. Complaints which were once expressed about the availability of funds are now directed towards the administration of funds. Thus, it is not surprising that the deans more often desire future increases in support from local and foundation sources than from federal sources. Table 2.13 sets forth the percentage of deans who desire proportionate increases in research funds from each of several sources, based on the following question:

> Would you like the percentage of funds from each source to increase, decrease, or remain the same in the future?

(The proportion of respondents who checked "same" or "decrease" are omitted from Table 2.13.) In this table we see that the federal government is least often favored as a source of new funds.

TABLE 2.13

Proportion of Deans Who Desire Increased Research Funds from Each of Several Sources

Sources of support	% desiring an increase from each source	No. responding
School or department of education research funds	93%	(58)*
Foundations	92%	(64)
University research funds	90%	(68)
Local school systems	78%	(54)
Professional organizations	74%	(43)
Federal government	69%	(64)

*Numbers in parentheses represent the bases of percents; these vary because some respondents did not check certain sources as to whether they should increase, decrease, or remain the same.

As a matter of fact, 14 per cent of the deans said that they would prefer for federal funds to decrease proportionately, while 17 per cent indicated that these funds should remain the same. Stated differently, almost a third of the deans do not desire a proportionate increase in federal funds. And these opinions were expressed before the passage of the Elementary and Secondary Education Act in 1965 which substantially increased the amount of federal funds for research and development. Consequently, the deans are perhaps even more desirous of a shift toward non-federal sources today than they were two years ago.

Some of the issues concerning federal support are of long standing, such as the possibility of federal control over institutional programs, or the onerous contractual regulations and overhead limitations of federal support as compared with foundation support. With the expansion of federal support, these issues may have become even more worrisome to the profession. For example, expansion in the number and sources of proposals submitted to the U.S.O.E. has prompted a major renovation in the proposal review process. Panels of reviewers have been replaced by a large pool of individual reviewers whose services are called upon at the discretion of agency staff. In addition, an internal review committee has been established for screening of proposals. These innovations have given the agency greater control over research support, and a number of persons have viewed this accretion of authority with alarm.

Probably another consequence of expansion of federal outlays for research is a tendency for cost-accounting criteria to weigh more heavily in determining qualification for support. Actually, this tendency has been discernible in the U.S.O.E. program for several years.

In our analysis of approval rates for proposals submitted to the U.S.O.E. in 1956-63, we found a tendency for applicants to be supported who kept the budget down while keeping the number of staff members up. As discussed in Appendix A (pp. 44-45), it appears that the cheaper the personnel, the greater the likelihood of receiving research funds. Specifically, within each of three budgetary brackets, approval rates increased with increments in the number of personnel; and these increases were sharpest if the proposals requested less than twenty-five thousand dollars. Thus, more than half of the proposals for less than twenty-five thousand dollars which offered three or more staff members were approved; compared with less than a fifth of the proposals in the same budgetary bracket which offered either a part-time or only one full-time investigator. (Number of staff members refers to full-time equivalent.) As we point out in the Appendix:

> Quite obviously, such cost-accounting considerations may bear very little relationship to the scientific potentialities of the proposal. As a matter of fact, they may promote mediocrity. Assuming that salary items are lower on cheaper projects with larger staffs, researchers who can be had cheaply are favored. Or, what seems even worse, part-time research is encouraged in a profession which already has an overabundance of marginal workers.

Cost-accounting criteria must be applied, of course, in judging the proposals to be supported. But evidence from our study suggests that in certain cases cost-accounting has been a dominant consideration. Presumably because the promises of scholarship are harder to evaluate than the promises of thrift, the latter sometimes prevail in determining qualification for research support.

In sum, the prediction of future trends in research and development needs to take into account the activities of the U.S.O.E., not only with respect to magnitude of funding but with respect to programmatic emphases and methods of administration as well.

D. Summary

We have suggested that an important condition for the healty development of research in schools of education is a climate which values empirical scholarship. Since the faculty of education least often emphasizes research, and since the faculty tends to set the goals of the school, research is frequently demoted to a relatively low position in the institutional hierarchy of goals. One of the major counterbalances to the influence of faculties of education has been the funding agencies outside the university. A lesser, but no doubt important counterbalance is the dean of education. By and large, the deans are quite favorable to the expansion of research, as shown by several measures.

The desire of university administrators to overcome barriers to research within their institution has led to a variety of arrangements for the facilitation and conduct of studies. One of the most interesting innovations is the position of research coordinator. This position has been created in recent years to stimulate and manage faculty activities. It might well be, however, that the coordinators are hampered in their work by the unsympathetic attitudes of faculty and of some administrators. This situation is probably inevitable inasmuch as coordinators are usually appointed in schools which place more emphasis on teaching and service.

The coordinators also seem to lack the requisite funds, staff, and facilities for carrying out their difficult assignments. Despite these drawbacks of the position, however, coordinators are performing intellectual tasks which are not performed by deans in schools where the position does not exist. One means of improving the effectiveness of the position may be to establish a research advisory committee composed of leading faculty members whose deliberations may be informed and implemented by the coordinator, and who can persuade the university administration and faculty to support the aims of the research program.

Turning from our description of new arrangements for facilitating research, we tried to gain some idea of future developments and difficulties. If the deans exert substantial effort to implement their desires for greater research activity, we may expect a near revolution in schools of education. In particular, the deans and research coordinators were highly interested in supporting research training at the time of our survey, although the high cost of fellowships and of training programs had prevented them from formulating definite plans to prepare researchers. In short, there can be little question but that schools of education were ripe for the training funds which the U.S.O.E. made available in 1965.

There is some indication, however, that deans and coordinators do not appreciate the importance of giving ample support to research units. This finding could be the result of their being forced to allocate scarce resources among several needed innovations, the most important of these in their judgment being research training. The obvious conclusion to draw is that additional funds are required to serve the wide range of needed innovations in schools of education.

In addition to the continued availability of funds for research and development, an important element in the shape of things to come is the manner in which federal agencies administer funds. This conclusion is based on the preference of a sizable minority of deans for proportionately more funds from non-federal sources, such as the university and foundations. Fear of federal control over higher education or dissatisfaction with certain contractual stipulations may explain the less favorable attitudes of these administrators towards federal funds. In particular, we have discussed the possibility that the costliness of new programs will increase "cost consciousness" in the U.S.O.E. to the detriment of scholarship. That the unit cost of staff members on proposed projects has occasionally been a dominant consideration in the decision to provide support is suggested by our analysis of proposals submitted to the U.S.O.E. in 1956-63. In brief, we found that approval rates increased with more staff and with less budget, suggesting that cheaper personnel were favored. Quite obviously, this policy bears little relation to the intellectual promise of the research which is proposed, and may even promote mediocrity. It also seems extremely wasteful of the time which scholars devote to preparing proposals to reject their research plans on purely financial grounds. If too much money is requested for the number of personnel involved, then either additional personnel could be added or less costly ways of carrying out the research could be urged. It is reasonable that cost-accounting should be brought to bear in the early stage of considering the project; but that proposals should be finally rejected on such grounds without allowing the applicant to make budgetary adjustments is insupportable. Nevertheless, this is precisely what our figures indicate as having occurred in the period 1956-63.

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CHAPTER III

RECRUITMENT POLICIES, JOINT ARRANGEMENTS WITH OTHER DEPARTMENTS, AND SUBSTANTIVE AREAS OF RESEARCH

In addition to those arrangements which have been introduced in the universities for facilitating research, there are two more or less traditional means of enhancing the research program: through recruitment of faculty members who have done research, and through establishment of relationships with departments outside of education whose interests are pertinent to educational problems. In the present chapter, therefore, we discuss the *recruitment policies of deans* with respect to various fields within education, and *existing arrangements with non-education departments*. Then, before turning to detailed examination of the history and current status of research units in the following chapter, we depart briefly from our discussion of organizational dimensions to describe the *substantive areas* in which research is being undertaken in the schools.

A. *Recruitment of Research Manpower*

Perhaps the most crucial task in raising the quality of research in an institution, at least over the short run, is the recruitment of competent personnel. Efforts to improve the skills of current faculty members who are poorly prepared to carry out research are often frustrated by the faculty's indifference, the lack of time for training in new skills, and the difficulty of altering perspectives acquired through years of professional work and study. Thus, the hiring of new personnel to fill research positions is probably widely recognized as the surest way to increase scholarly productivity. We would expect, therefore, that recruitment policies which emphasize qualifications for research would be highly related to the quality of research output. But before undertaking to answer this question, we shall describe the recruitment preferences of education deans for individuals with various backgrounds to fill positions in different fields.

The deans were asked to indicate whether they preferred someone mainly with either teaching or research experience for each of eleven major fields. Another option which we provided was someone with a great deal of public school experience. The question read as follows:

> If an opening occurred for someone to teach a graduate course in each of the major fields listed below, which of the following persons would you prefer to hire?
>
> (Use this code to indicate the type of person, and write the appropriate numbers in the spaces at the bottom.)
>
> A professor trained in a school of education --
>
> 1. Who has mostly taught in the field.
> 2. Who has mostly done research in the field.
>
> A professor trained outside a school of education --
>
> 3. Who has mostly taught in a related field.
> 4. Who has mostly done research in a related field.
>
> 5. A school practitioner who has a great deal of experience in the field.
>
> 6. No particular preference.
>
> (MAJOR FIELDS WERE LISTED HERE)

The proportions of deans who prefer researchers, teachers, or school practitioners for various fields are shown in Table 3.1.

In seven out of the eleven fields listed in our question, the deans tended to prefer someone with teaching rather than research experience. The exceptions were the fields of research methods,

TABLE 3.1

Recruitment Preferences of Deans for Teachers, Researchers, or School Practitioners in Various Fields

	% Deans who Prefer Background Mainly in:							
For Presumed Opening in Field:	Research	Teaching	Both Equally	Public Schools	Other	No Preference	Total	N*
Methods of Research	82%	3	7	-	4	3	99%	(67)
Psychology of Learning	51%	27	10	1	6	4	99%	(67)
Child Development	41%	32	14	1	4	7	99%	(69)
History of Education	34%	43	11	-	4	7	99%	(70)
Educational Sociology	33%	39	14	-	5	9	100%	(66)
Natural Science and Math	30%	45	9	6	5	5	100%	(64)
Special Education	29%	25	16	19	3	8	100%	(63)
Language Arts	27%	50	9	8	3	3	100%	(64)
Social Studies	27%	48	8	6	6	5	100%	(64)
Educational Administration	24%	29	10	30	3	5	101%	(63)
Guidance and Counseling	23%	36	13	16	5	8	101%	(64)

*Base numbers vary because those respondents who failed to answer were omitted.

psychology of learning, child development, and special education. In short, there is a tendency to prefer a teaching background for the "professional" fields, and a research background for the "academic" fields. But there is one academic field where a research background is not more often preferred: educational sociology. Thus, one of the major reasons for the tremendous deficiency of research on the social aspects of education might be that deans do not hire research-oriented scholars for this field. (The conspicuous absence of social scientists among educational researchers is demonstrated by our investigation of proposals submitted to the Cooperative Research Program, U.S.O.E., 1956-63. As may be seen in Appendix A, Table 21 (page A-38) only 2 percent of the applicants had backgrounds in the social sciences, compared with 27 per cent in psychology.)

Preference for a research background was especially marked, of course, in the field of research methods. In fact, this was the only field in which a clear majority of deans desire someone with a strong background in research. Even with respect to the psychology of learning field, only half the deans want a person who has mainly done research. Preference for a teaching background was greatest in language arts and in social studies.

These results are somewhat puzzling, for we have mentioned that the education deans tend to be highly in favor of more research on a variety of topics -- even more so than the coordinators -- and that they wish to almost double the number of researchers. There are two possible explanations for this apparent disjunction between the sentiments of deans and their recruitment practices.

First, it may be that some deans are overruled by departmental chairmen or faculty members. As we saw earlier, faculty and chairmen are less likely to emphasize research than deans; and the faculty was most often said to be influential in setting the goals of the school. Thus, the disjunction between the sentiments and the actions of deans might result from their inability to exert influence.

There is some evidence from our questionnaires that the faculty does occasionally overrule the deans' recruitment preferences. When we asked the coordinators if there were any problems in hiring or integrating research-oriented personnel into the teaching departments, several indicated that researchers were not always welcome. The question which we asked was the following:

> Have there been any difficulties recently in hiring new staff members who are enthusiastic about doing empirical research (as distinguished from field service and library research), or in integrating these staff members into the existing staff? If so, what was the problem, and in which department or division did it occur?

Out of the twenty-two coordinators who replied to this question, a majority of thirteen denied that there had been any recent problems along these lines. But the responses of the minority demonstrate that serious difficulties do sometimes arise. For example:

> Yes -- a few people have not been hired because they were "too researchy" for a department, particularly elementary education. One of the TOP research men on our staff is in a department which has not integrated him (it does not highly rate research). He will leave if his department assignment is not altered in the coming year.
>
> The difficulty is in getting current faculty members to hire a new person who has research competencies.
>
> Yes. It occurs in all departments. Chiefly because of differing views about the relative importance of research vs teaching and services.

> Yes. Some hesitation in employing such a person because of real or imaginary threat -- not limited to any one department.
>
> Research programs not developed enough for this to occur. Have had some "foot-dragging" on the part of department heads who see the primary function of teaching as the only function.
>
> The perception of the importance of empirical research in the activities of graduate education faculty has been changing over the past five years in the direction of more positive acceptance of its contribution. However, the elementary education area is still actively resisting this trend, and as recently as this academic year has failed to fill vacant positions when the specifications for these positions included an orientation toward research production.

These responses suggest that even when deans are desirous of improving the research program through recruitment of persons with strong research backgrounds, staff members in the school may set certain obstacles in the way of acquiring such persons.

A second reason that deans do not more often prefer to hire personnel who have mainly done research no doubt is due to their greater concern for meeting the needs of students by providing sufficient teachers. We have already seen that most deans place teaching ahead of research in the school's hierarchy of values. Hence, it is not surprising that they prefer teaching experience over research experience when confronted with a forced choice. As a matter of fact, the deans tend to feel that one of the most important contributions of research resides in the enrichment of teaching. In other words, research is not only regarded as secondary to teaching, but much of the value of research is seen in terms of its contribution to teaching functions. These conclusions are based on replies to the following question:

> It is sometimes said that teaching commitments seriously interfere with a professor's research efforts. On the other hand, it is argued that a researcher should also teach so that students will benefit from his research work. How do you personally feel about this issue; and how is it handled in your institution?

Virtually all of the deans believed that researchers should teach in order to enrich the instructional program. Concern with the contribution of research production to the instruction of students is evident in the following typical responses:

> I believe that research enriches the teaching process. All faculty members engaged primarily in research should teach some each semester.
>
> Participation in the field improves campus teaching.
>
> The two are complementary, not incompatible. Research will enrich teaching.
>
> In general I believe that we should try to combine in all staff assignments some teaching and some research. I do believe that the researcher can provide real values to the educational program through teaching! . . .

Of course, several deans pointed out that adjustments of teaching loads were necessary, and a few even felt that full-time research should be periodically undertaken. Only two deans, however, commented that teaching duties can seriously interfere with a professor's research effort:

> For those who can do research (and want to do it) released time from teaching should be made available. No researcher can do both.
>
> Since research and teaching are different activities, obviously they require differing abilities and interest. If a good research person is a mediocre teacher he should be excused from teaching. If he is talented and inclined at all to have apprentices and classes, these should be assigned to him, both for his sake and for student opportunity.

It is doubtful that most deans would agree with the "obvious" point, in the words of our last respondent, that "research and teaching require differing abilities and interests." Otherwise, the deans would not contend that research and teaching are naturally compatible and that all researchers should therefore be teaching.

But the real issue before us is not the possibility of intellectual interchange between research and teaching, but rather at what point are the intellectual contributions hampered by the competing demands which teaching makes upon the time of researchers? If the deans require researchers to carry teaching loads which do not allow them sufficient time to carry out research in a competent manner, then the intellectual contribution of research to teaching might be seriously compromised, to say nothing of the value of the research to scholars.

That heavy teaching loads do affect the quality of research done by the faculty is suggested by Table 3.2 which shows the proportion of schools named as doing the best research according to the student-faculty ratio. Schools with lighter student loads were more often named as doing the best research. And the value of reducing

TABLE 3.2

Research Quality According to Student-Faculty Ratio

Student-faculty ratio	% schools doing best research
High (15 or more students per faculty member)	15% (27)
Low (fewer than 15 students per faculty member)	24% (38)

teaching loads so that more time can be devoted to research is strongly indicated in Table 3.3. Here we find that schools with a larger proportion of faculty members with reduced teaching loads (in order to carry out research) were considerably more often designated as doing the "best research." In short, it appears that teaching obligations can seriously interfere with the work of researchers. An important implication is that the researcher who is obliged to teach a goodly portion of his time may actually be doing an injustice to his students by disseminating his own research results and experiences as an empirical scientist. As pointed out at the beginning of the chapter, organizational restraints may seriously affect the quality of intellectual work.

TABLE 3.3

Research Quality According to Proportion of Faculty with Teaching Reductions for Research

% faculty with reductions in teaching for research (full-time equivalent) *	% schools doing best research	
High (6% +)	[redacted]	32% (22)
Low (0-5%)	[redacted])	4% (25)

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*The question from which this information was derived was:

Is teaching load reduced for faculty members in the graduate program who wish to do research (as distinguished from field service)?

___ Yes ___No

IF YES: Among all those who are doing research, about how many have their teaching load reduced by the following proportions?

___ 1-33% ___34-50% ___51-99% ___100% (full time research)

(By multiplying the number of persons by the mid-point of each percentage range, we were able to derive full-time equivalencies.)

To return to our original point concerning the deans' lack of follow-through in their desire to increase the amount of research in their schools, it is possible that their emphasis on the contribution of research to *teaching* as a consequence of enrollment pressures restrains them from seeking new faculty members who have mainly done research. Thus, the deans may be of two minds: they value research highly and are enthusiastic about expanding the amount of research effort in their schools; but they also believe that teaching is the more important obligation of the faculty, and therefore that persons who have mainly done research are not the most desirable recruits. The unanticipated consequences of this double standard might be that *both research and teaching are compromised* -- the part-time researcher is unable to produce competent work, but goes ahead and communicates his research (and his standards of workmanship) to students in the classroom. A way out of this dilemma will be suggested in our final chapter, which contains recommendations for reorganization of schools of education.

Throughout our discussion of recruitment policies we have assumed that the recruitment of individuals with strong research backgrounds *makes a difference*. Evidence that this is more than an assumption is presented in Table 3.4. There we see that *the deans of the "best research" schools more often prefer new faculty members who have mainly done research*. In the schools named as doing the best research, the deans prefer a researcher rather than a teacher for more than half of the fields listed in our questionnaire (a mean of 5.9 fields out of the 11 fields listed); while in the remaining schools, they prefer researchers for *less than a third* of the fields (a mean of 3.3 fields out of the 11 fields listed). These results underscore the vital importance of recruitment as a means of enriching the research program in schools of education. The two barriers to recruitment of researchers which we have mentioned -- resistance of faculty members and emphasis on teaching -- need to be considered quite carefully, therefore, in our final recommendations.

TABLE 3.4

Mean Number of Fields for Which a Person Who Has Mainly Done Research Is Preferred by Deans, According to Research Quality of the Schools

	Schools doing best research	All other schools
Mean number of fields for which a researcher is preferred:	5.9	3.3
Number of fields listed:	(11)	(11)
Number of deans:	(16)	(55)

One possible means of gaining support for recruitment policies which favor individuals with strong backgrounds in research is to involve liberal arts and science scholars in the selection of new faculty members. Thirty-nine per cent of the deans claimed that the "academic faculty and administration" placed research in the first rank as an obligation of the education faculty. Hence, the liberal arts and science faculties are even more likely to emphasize research work in education than the deans of education. Since we asked the deans to tell us whether the academic faculty participated in the recruitment of new staff members in education, we are able to show the strong relationship between involvement of academic faculty and the research quality of the school of education. Table 3.5 reveals that more than half (55%) of the schools where the academic faculty participates in recruitment were named as doing the best research, compared with only 2 per cent of the remaining schools (Q = .95).

TABLE 3.5

Research Quality According to Participation of the Academic Faculty in Recruitment of Education Faculty

Participation of professors from academic departments in the selection of the faculty of education:	% Schools doing the best research	
Yes	55%	(32)
No	2%	(43)

Moreover, it appears that joint selection of the faculty of education is related to research quality even when the liberal arts departments are not the "best" according to the Keniston scale of university reputation.[1] As shown in Table 3.6, 33 per cent of the schools of education practicing joint selection and located in "other" (poorer) universities were designated as doing the best research, compared with only 3 per cent of the schools in this same category which do *not* practice joint selection. This suggests that some control over recruitment by the academic departments tends to be beneficial for educational research even when these departments are not of the highest quality.[2]

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[1] Hayward Keniston, *op. cit.*

[2] Unfortunately, there are too few cases to determine the relationship between research quality and joint-selection in the "best (cont.)

TABLE 3.6

Research Quality of Schools of Education, According to Joint Selection and Reputation of Liberal Arts Departments (Keniston Scale)

Joint selection of education faculty:	% Schools of Education Doing Best Research	
	Best Universities	All Other Universities
Yes	85% (13)	33% (18)
No	** (2)	3% (39)

**Too few cases for percentaging

The fact that joint selection is associated with research quality raises the question of whether the liberal arts professors influence the selection of candidates with a liberal arts background, which in turn might contribute to the quality of research. Plausible as this interpretation may sound, it is not supported by the evidence from our survey. In the "best research" schools and in the remaining schools alike, 19 per cent of the faculty teaching courses to graduate students in education received most of their training in the liberal arts and sciences. Thus, the association between joint selection of the faculty and research quality cannot be accounted for by any tendency for the behavioral scientists to influence the selection of candidates from their own background.

In conclusion, these results suggest the importance of faculty members participating in recruitment who are themselves committed to

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(cont.)

universities," but it is clear that the "best universities" more often follow this practice. In the universities with a high reputation, 86 per cent of the schools of education engage in joint-selection of the faculty, while in the "other" universities only 30 per cent of the schools do so.

empirical scholarship. And since the liberal arts professors seem to play a crucial role, those schools of education which are relatively devoid of able researchers, but which desire to augment their research program, might be well advised to secure support from the liberal arts faculty in selecting new personnel.

But joint selection of personnel is not the only avenue whereby professors from the liberal arts and sciences can affect the research program of schools of education. In the following section, we shall discuss several other arrangements with the liberal arts and sciences.

B. Relations with Liberal Arts and Sciences

One of the most striking features of recent developments in educational research is the influx of personnel from fields outside of professional education. According to our analysis of proposals submitted to the U.S.O.E. in the period 1956-1963, in the latest two-year period covered by our study (1962-63) the majority of proposals originated with individuals whose principal affiliation was outside of a school or department of education; whereas only four years earlier, less than a third of the proposals originated with non-educators.[3] (See Appendix B, pp. 26-28). More impressive evidence of the magnitude of this trend can be seen in the fact that the number of proposals from non-educators increased almost four-fold over the period 1956-63. The number submitted by educators, however, remained about the same. In sum, it appears that the preponderance of well-financed projects which are conducted in the universities are now located outside schools of education.

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[3] At a conference recently held by the U.S.O.E., a spokesman for the agency mentioned that about 70 per cent of the proposals now originated with non-educators.

That even the U.S.O.E. was caught unawares by this trend is suggested by the fact that most of the members of the nine-man Research Advisory Committee, which judged the proposals before the panel system was inaugurated in 1963, hailed from professional education in each successive year. Moreover, this "cultural lag" may have taken its toll of proposals from non-educators, for there was a reasonably strong relationship between shifts in the disciplinary composition of the committee and the proportion of non-educators' proposals which were approved for funding. When the committee added members from professional education, the approval rate of non-educators' proposals declined; when it subtracted educators, the approval rate of non-educators' proposals increased. (Appendix A, pp. 29-30). To our mind, these results point to basic differences in research traditions between professional education and the behavioral sciences which influence assessments of the value of proposed research.

Possibly these traditions relate more to methodologies than to substantive foci. For we found little difference between the topics of research posed by proposal writers inside and outside schools of education. The absence of any notable substantive differences raises some doubt about the assumption that behavioral scientists are eager to do research on topics which have tended to be neglected by the profession. When we compared the research methods employed, however, we found that applicants located in education departments much more often proposed tests, experiments, and observational techniques; while non-educators much more often planned a social survey. (Appendix A, pp. 34-36). (In Chapter VI we discuss the primitive notions of surveys which are still held by professors of education and relate this intellectual lag to the traditional use of surveys for social bookkeeping.) In large part, the preference for surveys on the part of non-educators who submitted proposals is explained by the fact that social scientists (i.e., non-psychologists) were much more often represented among non-educators. (Appendix A, pp. 36-37). As noted earlier in this chapter, 22 per cent of the non-educators who applied for research funds were social scientists (sociology, anthropology, history, etc.) compared with only 2 per cent of the educators. Thus, the main benefits of closer contact with the liberal arts and science departments may reside in bringing a social perspective to the research of educators, and of informing them of research methodologies which they have tended to overlook.[4]

But these comparisons between educators and non-educators do not inform us about differences in quality of work or in the standards which are applied. This issue can be resolved only by subjecting research output to systematic evaluation.[5] One piece of circumstantial evidence for the lower standards of research work in education is provided by our survey of authors of empirical research articles which were published in 1964.

The authors were asked whether they were primarily affiliated with a department of education or with another department in the university at the time of their research. We then observed the types of journals in which the two groups published, and found that educators much more often published their research in journals which were not mainly devoted to research. (A journal was classified as predominantly devoted to research if half or more of the articles reported empirical research results.) More than a third (37 per cent) of the articles published by educators appeared in non-research journals, compared with only about a tenth (11 per cent) of the articles published by non-educators. This difference strongly suggests that interest in the science of education is not sufficiently developed to warrant the creation of research journals in educational fields. The paucity of such journals may prevent the emergence of standards which have specialized application to scientific work. In other words, the throwing together of research and non-research in the same journals indicates that the line between empirical investigation and other kinds of intellectual work in education is somewhat blurred. (This will become quite apparent in a later chapter where we show the effect of involvement in service activities on the very definition of educational research.) In sum, the comparative absence of specialized channels for scientific discourse among educational researchers suggests -- but does not prove -- that research standards in the profession have not attained the same level of development as among non-educators. This points to a third contribution of interdisciplinary work to educators: exposure to scientific norms which have achieved fuller acceptance among behavioral scientists.

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[4] It would be surprising indeed if research done by behavioral scientists were not more theoretically based also. Brown has found that 65 per cent of educational researchers value the practical applications (continued on following page)

[5] We have been working on an evaluation instrument for this purpose in connection with the current project, and hope to continue this aspect of our study in the near future.

In light of the possible benefits to education of an interdisciplinary attack on educational problems, it becomes quite important to consider the avenues of interchange which exist and the amount of traffic

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[4] of their research, compared with 40 per cent of sociologists and psychologists in the same universities. (Lieba Brown, "Educational Research and the Liberal Arts," dissertation in progress, Bureau of Applied Social Research, Columbia University.)

which takes place. And the mounting interest of behavioral scientists in education as a field for research makes the subject especially timely. There are two levels on which interdisciplinary relationships within the university need to be assessed: the level of administrative provisions (which afford opportunities and pressures), and the level of actual collaboration.

1. Administrative provisions

One administrative arrangement which we have already mentioned is the participation of academic faculty in selection of new staff members in education. We also asked the deans and coordinators about the existence of several other arrangements. The prevalence of each of these provisions is shown in Table 3.7.

TABLE 3.7

Proportion of Schools with Selected Joint Arrangements Between Education and Non-Education Departments and Professional Schools

	Arrangement exists with:	
	Academic Departments	Other professional Schools
Participation of non-education professors on examination committees for the doctorate	95%	61%
Joint teaching appointments	73	41
Interdisciplinary committees or seminars which are concerned with scholarly issues	69	41
Visiting professors from other universities for teaching	53	43
Participation of non-education professors in the selection of the faculty of education	43	29
Joint research appointments	41	25
Visiting professors from other universities for research	28	21
Number of schools:	(75)	(75)

We learn from Table 3.7 that arrangements are much more likely to exist with academic departments than with other professional schools. Of greater significance, we see that academic professors participate in the recruitment of the education faculty in less than half of the schools (43 per cent). Finally, it is of some interest that the two joint arrangements for research are the least common types of arrangements, both with academic departments and with other professional schools. The two most common arrangements have to do with graduate training rather than with scholarly interaction, i.e., participation on examination committees for the doctorate, and joint teaching appointments.

The importance of joint arrangements with the liberal arts and sciences is strongly suggested by the relationships which are found between each of these arrangements and the research quality of the school. With the exception of joint doctoral examinations, which are found in almost all schools, Table 3.8 shows the proportion of schools with each type of arrangement which were named as doing the best research. And we consistently find that the existence of each joint arrangement is associated with research quality. Most highly related to research quality are "interdisciplinary committees or seminars which are concerned with scholarly issues" ($Q = 1.00$) and "participation in the selection of the faculty of education" ($Q = .95$).

In view of the strong association between joint selection of the faculty and research quality, it seems unfortunate that fewer than half of the schools of education follow this practice. As a matter of fact, if we compare the rank-order of joint arrangements according to frequency of mention with the rank-order according to association with research quality (employing Q coefficients of association for the latter), we find a rank order correlation which, although positive, is not especially high (r = .57). Thus, if we can assume that joint arrangements affect quality, it appears that certain of these arrangements are not sufficiently widespread.

It is important to note that the relationship between research quality and joint arrangements with the liberal arts and sciences is not explained by the better reputation of the universities in which the "best research" schools tend to be located. It is true that all of the arrangements listed in Table 3.8 are more often found in the universities with better reputations (according to the Keniston scale); and, as mentioned earlier, it is possible that the respondents named certain schools of education because of the reputation of the university. But when we control for university reputation, each joint arrangement is still associated with being named as doing the best research. (See Appendix C, Table 3).

We cannot be sure, of course, of the causal connection between joint arrangements and research quality. It might be that if the school of education is already doing outstanding research, representatives of the liberal arts and sciences would be more anxious to participate in the school's affairs. Or, our findings could be accounted for by the desire of scholars in the better schools of education to establish relationships. These alternative explanations assume that research quality precedes the establishment of joint relations. But if this were the case, then we should find that joint arrangements which entail some control over the affairs of the school of education are no more highly associated with research quality than other arrangements.

TABLE 3.8

Research Quality According to the Existence of Joint Arrangements with the Liberal Arts and Sciences

		% Schools Doing Best Research	Q Coefficients of Association
Interdisciplinary committees or seminars which are concerned with scholarly issues			
	Yes	33% (42)*	1.00
	No	0% (23)	
Participation of non-education professors in the selection of the faculty of education			
	Yes	50% (32)	.95
	No	2% (43)	
Joint teaching appointments			
	Yes	29% (56)	.75
	No	5% (19)	
Joint research appointments			
	Yes	38% (32)	.64
	No	12% (43)	
Visiting professors from other universities for research			
	Yes	38% (21)	.51
	No	17% (54)	
Visiting professors from other universities for teaching			
	Yes	28% (40)	.29
	No	17% (35)	

*Numbers in parentheses are the bases of the percentages.

This does not seem to be true. The association with participation in the selection of the faculty of education is higher than most of the other arrangements. The only arrangement which exceeds joint selection of the faculty in importance is "interdisciplinary committees or seminars which are concerned with scholarly issues." While this arrangement does not imply formal control by the liberal arts and sciences, it does entail interaction in which standards of scholarship come into play. Hence, a certain measure of informal control, or at least influence, may be operative in such committees or seminars.

Furthermore, if liberal arts faculty members were attracted to the school of education because of its already superior standing, then we should find that the "best research" schools have a higher proportion of faculty members who were mainly trained in the liberal arts and sciences. This expectation is also contradicted by our results, for the same proportion of the faculty members in the "best" as in the other schools hailed from the liberal arts and sciences (19 per cent of all the faculty in each category of schools received most of their training in liberal arts and science departments).

These arguments for the effect of joint arrangements on research quality are highly inferential. It still remains to be shown by further research that joint arrangements actually influence what takes place in professional schools. It would be particularly helpful to know the exact extent of interrelations and the length of time various arrangements have existed. Since joint arrangements with liberal arts and sciences was only one facet of our study, we did not delve into the details of these formal arrangements.

2. Interdisciplinary collaboration in research

Since we discuss interdisciplinary relationships in research units in the following chapter, at present we shall confine our attention to interdisciplinary work outside of these units. But first, we need to recognize that research collaboration of any kind is not very common in schools of education. Outside of research units, individual projects outnumber team projects by three to one. When we asked the deans and coordinators to tell us the number of investigations being conducted by individual faculty members and the number being conducted by teams, we found that there were 10.1 individual projects and 3.4 team projects per school. (Research units are more likely to contain teams of investigators, as we shall see in the next chapter.) Among teams, we find that 25 per cent are composed of members from the academic departments in the university. The proportion of teams with varying compositions are shown in Table 3.9.

Most often there is a combination of educational specialties, such as guidance and administration (37 per cent of the teams). Teams with members from different academic fields within the schools of education are less common. Twenty-five per cent of the teams were composed of persons from different academic fields inside the school (e.g., educational sociology and educational psychology), and 18 per cent were composed of persons representing an educational specialty and an academic field inside the school. We are unable to say how much overlap there is between teams reported in each of these two categories; but since teams average only about two and a half members, the amount of overlap cannot be very great. (There should be no overlap between these figures for educational specialties and academic fields in schools

TABLE 3.9

The Composition of Research Teams Outside of Research Units

	% teams
*Different *specialties* within professional education (e.g., guidance and administration)	37%
An *academic department* within the university and the school of education	25
*Different *academic* fields within the school of education (e.g., educational sociology and educational psychology)	25
*An educational *specialty* and an *academic field* within the school of education	18
Education and another *professional* school	10
Education and *another university*	7
All other combinations	9
	131%**
Number of *teams* in schools reporting:	(114)
Number of *schools* reporting:	(31)

* Refers only to teams composed entirely of faculty members in education.

** Total percent exceeds 100% because some teams were cited more than once (i.e., categories of team composition are not mutually exclusive).

of education, on the one hand, and teams composed of personnel from *outside* the school of education, on the other, since the question about specialties and academic fields in education referred only to teams composed *entirely* of faculty members in education.)

The fact that teams composed of specialties and academic fields *within education* are less common than teams composed of education and non-education faculty (18 per cent versus 25 per cent) suggests that *the barriers between professional specialties and academic fields within education are at least as great as those between educators and* non-educators. This problem was alluded to in several field interviews. As the head of an academic division in one of the leading schools of education pointed out, "Academic people quickly pick up education. The war has been less with new academic people than among older types." A prominent sociologist in another school of education observed, "The whole department of Social Foundations is out in left field -- isolated from the rest of the school." If the barriers within schools of education between academic and professional fields is as great as our results suggest, then the practice of hiring persons trained in the liberal arts and sciences may have less effect on the professional training program than is commonly anticipated by proponents of this practice.[6]

In general, then, interdisciplinary research activities in schools of education are relatively rare, at least outside of research units. (We shall return to this issue when we discuss the organization of research units in Chapter IV.) Since individual projects outside of units outnumber teams by three to one, and since 25 per cent of the teams reported to us combine personnel from the school of education and from behavioral science departments, only about 8 per cent of all research investigations outside of research units include behavioral scientists from other departments. This figure is quite close to the proportion of research proposals submitted to the U.S.O.E. in 1956-63 which entailed co-principal investigators from education and from other departments. According to our study of the background of the applicants, only 2 per cent of the proposals were submitted by education and non-education personnel jointly. (In the latest two year period covered by our study of proposals (1962-63), however, the figure was slightly higher, i.e., 4 per cent.) It seems evident, then, that less than a tenth of the research projects associated with graduate schools of education include non-educators.[7] Thus, the lack of interdisciplinary research in education needs to be treated as another conspicuous feature of the organizational context of research in schools of education.

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[6] Further evidence of the split between educators and behavioral scientists within schools of education is cited by Brown, ibid. Barriers to the greater utilization of joint arrangements are also discussed in Brown's preliminary work.

Now let us briefly depart from our organizational analysis to consider the substance of research being carried out.

C. Research Topics

We furnished the respondents with a list of 24 possible areas of research in education and asked them to check those in which research currently was being undertaken by the faculty, and those areas in which they desired more research. By comparing the present distribution of research effort with the deans' preferences for more research, we can discern some sizable discrepancies between the current and the preferred situation. In fact, it is plain that the deans are anxious to expand research in almost every field. Table 3.10 sets forth (1) the percentage of schools engaged in various kinds of research, and (2) the percentage of deans who said that they wished to see more research in the various fields. More than half of the schools are conducting research on the following topics: guidance and counseling (64%), methods of instruction (59%), tests and measurements (55%), educational administration or organization (54%), and reading (51%).

The most striking difference between the distribution of current effort and the distribution of preferences shows up with regard to adolescent development. While only 21 per cent of the schools are now doing research on adolescent development, 57 per cent of the deans would

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[7] This estimate of the low level of interdisciplinary work has recently been confirmed by a third source of data on collaborative relationships. Brown reports that only 22 per cent of the educational researchers in her study have ever published jointly with scholars

(continued page 88)

TABLE 3.10

Current Topics of Research Outside of Bureaus and Topics Preferred by Deans

	% Schools Doing Research	% Deans Who Want More Research	% Difference
Guidance and Counseling	64%	61%	- 3%
Methods of Instruction	59	70	+ 11
Tests and Measurements	55	57	+ 2
Educational Administration or Organization	54	70	+ 16
Reading	51	65	+ 14
Psychology of Learning	49	65	+ 16
Special Education	42	48	+ 6
Social Studies Curriculum	37	70	+ 33
School Finance	37	45	+ 8
Talent, Creativity of Students	36	57	+ 21
Mathematics Curriculum	33	61	+ 28
History of Education	33	38	+ 5
Comparative Education	32	49	+ 17
Natural Sciences Curriculum	29	59	+ 30
Child Development	29	51	+ 22
Teacher Personality	28	46	+ 18
Research Methodology (other than tests and measurements)	26	36	+ 10
School-community Relations	25	35	+ 10
Teaching as a Profession	22	41	+ 19
Adolescent Development	21	57	+ 36
Other Language Arts	17	43	+ 26
Physical Education	16	28	+ 12
Foreign Languages Curriculum	14	49	+ 35
Business & Distribution Education	12	23	+ 11
Other	17	14	- 3
Total schools and deans:	(76)	(69)*	

*Five deans who did not answer the question are omitted from the base of percentages.

like to see more done. Most of the other major discrepancies between the actual and the preferred state of affairs relate to curriculum research, particularly in language arts, natural sciences, social studies, and mathematics. In short, the deans are especially desirous of more work on the design and evaluation of new curricular materials. On the whole, the responses to this question confirm the favorable attitudes of deans towards research which we have already observed with respect to an increase in the number of research personnel.

So as to summarize our results according to both the extent to which research is being carried out on each topic and the desire for more research, we have grouped the topics in Table 3.11 according to (1) the proportion of schools doing research on each topic, and (2) the percentage difference between the proportion of schools doing research and the proportion of deans who wish more research to be done on the topic. For the sake of convenience in referring to this table, we shall characterize these dimensions as the "supply" of research and the "excess demand" for research, respectively.

Looking at cell #1 in Table 3.11, we find topics for research in which both supply and excess demand are high: educational administration and organization, and psychology of learning. The high level of demand for research on these topics despite the great amount of work already going on in these areas suggests that much of the past research has been either defective or inapplicable to educational problems.

Cell #3 is most informative about areas which require high priority, for these topics are low in supply but high in excess demand: adolescent development, foreign language and other language arts curricula, and teaching as a profession.

(cont.) [7] outside of education. The percentage collaborating at any one time is much smaller than this figure, of course. Brown, ibid.

TABLE 3.11

"Supply" of Research on Various Topics and "Excess Demand" for Research

	EXCESS DEMAND (% difference between current distribution among schools and the proportion of deans who desire more research)	
SUPPLY	**High** (% diff. = 15% or more)	**Low** (% diff. = less than 15%)
High (40% - 64% of schools)	1 Psychology of learning Educational administration and organization	4 Guidance and counseling Methods of instruction Reading Tests and measurements Special education
Medium (26% - 39% of schools)	2 Social studies curriculum Natural science curriculum Mathematics curriculum Child development Comparative education Teacher personality Talent, creativity of students)	5 School finance History of education Research methodology
Low (1% - 25% of schools)	3 Adolescent development Foreign language curriculum Other language arts (not reading or for. lang.) Teaching as a profession	6 School-community relations Physical education Business and Distributive Education

Cell #4 contains topics which might be characterized as low priority areas, since a great deal of research is already devoted to these topics and the level of demand for more research barely exceeds the present supply: guidance and counseling, methods of instruction, reading, tests and measurements, and special education.

A final cell which is especially interesting is #6, where we find topics which are characterized by both low supply and low excess demand. In other words, these are the neglected fields which might continue to be neglected. Perhaps the only serious problem from the standpoint of serving education is the topic of school-community relations, which ranks eighteenth with respect to supply and twenty-first with respect to demand (that is, in terms of the frequencies with which the topics were mentioned). That the topic is classified with physical education and distributive education with respect to both supply and demand demonstrates the low esteem in which research on the social context of education is held.

D. Summary

One of the most important means of enhancing the research program of the school, at least in the short run, is through recruitment of personnel who have devoted a major portion of their time to research. But despite their highly favorable attitudes towards research, deans do not generally prefer such persons. This apparent contradiction between desires and action is probably explained by the deans' concern that research activities should benefit classroom teaching, which conviction assumes major importance due to enrollment pressures.

Another reason may be that faculty and chairmen sometimes overrule the deans in their desire to recruit researchers. But whatever the cause, one consequence of exacting more research from teachers might be that both research and teaching are compromised, since teaching loads may interfere with the conduct of research which is supposed to be communicated to students. The importance of recruiting individuals who have a strong background in research is suggested by the fact that the "better" research schools more often follow this practice.

If the faculty of arts and sciences participate in recruitment of education professors, the school is more likely to be named as producing outstanding research in education. This result suggests that deans who have difficulty in overcoming the resistance of faculty members in education might enlist the participation of the liberal arts and sciences in recruitment. In fact, there are several other arrangements with the arts and sciences which are associated with the research quality of schools of education. Establishing relationships with other departments is especially important in view of the neglect of non-psychological approaches in education. The paucity of social research in these schools stems from a long tradition which can be broken only by persistent effort to involve scholars from other departments in the affairs of the school. At the present time, however, team research of any kind is infrequent in schools of education, and interdisciplinary teams are in the minority. Seemingly, barriers have even arisen between academic and professional departments within schools of education which reduce interdisciplinary effort. (These observations are confined to the situation outside of research units. In the following chapter, we explore interdisciplinary contacts which characterize units.)

Turning from strictly organizational features of the schools, we looked at the distribution of research effort among an array of topics, and also at the areas in which more research was desired by deans. With reference to almost every area, the proportion of deans desiring more research exceeded the proportion of schools currently engaged in research. Classifying the topics according to the proportion of schools presently doing research on each of them, and the excess proportion of deans desiring more research, we were able to map out areas of high and low priority. The greatest discrepancies between the current distribution of research effort and the desires of deans related to adolescent development and to curriculum research in various fields. The only low priority topic (low in "supply" as well as in "excess demand") which gives us great cause for concern is the study of educational contexts. This state of affairs is no doubt related to the absence of empirically oriented social scientists in schools of education.

CHAPTER IV

RESEARCH UNITS IN SCHOOLS OF EDUCATION -- THEIR GROWTH, ACTIVITIES, STRUCTURE AND RELATIONS WITH LIBERAL ARTS AND SCIENCES

There is no single characterization which is adequate to cover the array of research organizations associated with schools of education. Research "units" (which is the simplest and most general term which comes to mind) range from highly autonomous enterprises containing a sizable staff and large budgets devoted almost entirely to empirical research, through a variety of smaller operations principally concerned with developmental and service activities or with facilitating the small-scale research of independent faculty members, to arrangements which are almost indistinguishable from the teaching departments which comprise them. Under the rubric of "units" one can count training facilities with project money, informal teams of faculty members who share some facilities and resources, offices for in-house research on the operations of the institution, lab schools which make serious efforts to evaluate new educational practices, centers which reach into several departments and schools of the university for personnel and resources, bureaus which are equally concerned with the provision of services to local schools and with research, and some school study councils which engage in systematic research. All such units conducting empirical research have been included in our study of research organizations in schools of education.[1]

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[1] For a description of the manner in which the units were identified, see Chapter I.

Only a minority of researchers in schools of education are associated with these research units. According to our survey of authors of empirical research articles published in scholarly journals in 1964, 21 per cent of the authors who were primarily affiliated with graduate schools of education did their research in association with a research unit. By contrast, 31 per cent of the authors who were primarily affiliated with non-education departments did their research in association with a unit. Thus, it appears that educational research units are somewhat under-utilized in the universities when compared with other departments. (For details, see Appendix D, Table 3, p. D-7).

Table 4.1 shows the mean number of personnel of different kinds associated with units in schools of education. There is a total of about 21 persons associated with each unit on the average. The

TABLE 4.1

Mean Numbers of Professional Personnel Associated with Research Units and Mean Number of Doctoral Students Working on Projects

	Mean Number of Persons per Unit	No. Units Reporting
Professional personnel		
Staff		
Full-time	2.2	(58)
Part-time	3.1	(58)
Facilitated faculty	8.2	(55)
Total professional persons:	13.5 per unit	
Doctoral students working on projects in unit	7.6	(55)
Total professional and doctoral student personnel:	21.1 per unit	

majority (13.5) are professional persons, and the remainder are graduate research assistants. (There is also an average of nine graduate students per unit using data for doctoral dissertations, although this figure includes some research assistants.) Most of the professional persons associated with research units are non-staff faculty members whose work is facilitated by the unit (8.2 out of 13.5 professional persons per unit). In short, there is a large body of researchers in schools of education who seek the services of research organizations, although they constitute a minority of educational researchers.

Many of these units have been created within the recent past. Table 4.2 shows that a quarter of the existing units were founded within the five years preceding our survey (1960-65), while almost two-thirds were founded within the past fifteen years. In the same fifteen year period we have grown accustomed to professional committees, symposia, and publications on the problems of organizing research in the field of education. And in the near future we shall see the founding of massive regional laboratories with support chiefly from the U.S. Office of Education.

TABLE 4.2

Age of Research Units in Education

	% units
1 - 5 years (1960-65)	26%
6 - 15 years (1950-59)	39
16 years or older (1920-49)	35
	100%
	(62)

In the midst of these new developments, it is easy to gain the impression that the burgeoning of educational research organizations is strictly a contemporary phenomenon. Table 4.2, however, does not reveal the large number of research units which were founded in earlier years but which have since disappeared. Although nothing like the present level of financial commitment was achieved in the past, many of the developments today were anticipated on a smaller scale for a number of decades. As a matter of fact, some of the main ideas pertaining to research organization which we now hear vigorously espoused were enunciated by J. M. Rice as early as 1902.

Since Rice may appropriately be regarded as the "father of educational research bureaus," a brief look at some of his ideas and the fate with which they met will serve to introduce the reader to some of the issues to which we have addressed ourselves in this chapter. Following a discussion of Rice's ideas, we shall present data on the "life expectations" of research units in schools of education. Then, turning from the historical materials to the current status of research units, we shall describe the units according to several major organizational dimensions, look into their substantive work, consider problems of recruitment and work organization, and finally examine their relations with departments outside of education.

A. Observations on the History of Research Organizations in Education

Rice's early exhortation to the profession to lend support to a national bureau of educational research sounds a good deal like recent proposals. For example, in 1902 Rice wrote:

> It may be said, without any exaggeration, that up to the present time the science of pedagogy has been in its entirety a structure based on no stronger foundation than one of opinions. . . . Now that it has been demonstrated that we have a ready means of learning with what success each teacher is meeting, and therefore a basis for studying why certain schools are successful and others not, there ought to be no delay in taking advantage of it. But who is to do the work, and who is to pay for it?[2]

In an article that appeared the following year (1903), Rice shows that the research program which he had envisaged required the establishment of a research bureau with a sizable staff and large financial resources:

> . . . no time should be lost in setting the wheels in motion. However, it so happens that a most important problem remains to be solved. The inductive method applied to pedagogy necessitates the examination of pupils in many different schools and localities, the marking of thousands upon thousands of papers from many different points of view, the construction of elaborate statistical tables, etc., etc.; and a source of revenue must be provided to pay for the travel and the clerical hire.[3]

Rice therefore established a department of educational research under the auspices of The Forum magazine to implement his research plans; but lack of funds and also great hostility of educators forced him to discontinue this enterprise. Thus, the father of educational research organizations seems also to have experienced the first stillbirth. (When we turn to a discussion of the birth and death of research bureaus, we shall see that Rice's failure to organize research has been shared by others on numerous occasions.)

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[2] J. M. Rice, "Educational Research," The Forum, 35 (July, 1902), p. 124.

[3] J. M. Rice, "The Society of Educational Research," The Forum, 35 (July, 1903), p. 119.

After the demise of The Forum's department, Rice founded The Society of Educational Research with the primary purpose of maintaining a "Bureau of Research,"

> . . . to act as a centre of information for those who are desirous of knowing with what degree of success the various educational methods and processes in use in our country have been rewarded.[4]

Essentially, Rice was advocating a national research agency which would remain independent of the universities (which he regarded as hostile to his plans), and which would derive financial support from local school systems. Rice's second organization was also short-lived, but the publicity which he received for his plans may have contributed to the founding of the numerous social bookkeeping and testing bureaus which were founded in the following decades.

It should be clearly understood, however, that these bureaus did not realize Rice's plan for a national assessment of educational achievement so that the conditions affecting education could be studied on the broadest scale. In fact, only in the past year has this idea been implemented by the Exploratory Committee on Assessing the Progress of Education, which is currently supported by the Carnegie Corporation.

If we compare a recent statement issued by this new agency with Rice's proposal of 1902, we are struck by the enormous lag between the inception of the idea and its ultimate execution -- a lag of some sixty years:

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[4] Ibid., p. 120.

Rice (1902):

> Instead of stating what results shall be accomplished, let us ask "What results can we get?" . . . It opens the way to investigations which will enable us to learn what results the schools of our country have been getting -- the good, the moderate, and the poor -- and therefore what results may be reasonably expected. . . . (But) it is not enough to know that some schools are very much more successful than others; we must also try to learn the reasons why some have succeeded and others have failed, and in this way endeavor to discover certain fundamental laws of teaching which may be applied by all.[5]

Exploratory Committee on Assessing the Progress of Education (1965):

> Representatives of private and public institutions concerned with education have recently been discussing the possibility of assessing the achievements of American education. . . . First, it would give the nation as a whole data on the strengths and weaknesses of the American Educational system. . . . Second, (it) would provide data necessary for research on education problems and processes which cannot be undertaken now. Third . . . international comparisons might be possible. And finally, it is hoped that a national assessment of education would make all groups more vitally interested in the educational system -- not just in where it stands, but also in what its goals should be and how it might be improved.[6]

Also like Rice, the Exploratory Committee intends to administer standardized tests to a national sample of children over time.

To be sure, there are differences between these two conceptions of a national assessment of education. For one, Rice did not mention measurements of the students' motivations, values, and health, which measurements are planned for the current assessment. For another, Rice was much more concerned with provoking the schools to improve their practices through invidious, statistical comparison. And there are other differences with regard to sampling, tests, and so forth. But the points of similarity between the two conceptions are sufficiently striking to pose an interesting question: Why did it take sixty years to launch a systematic, nationwide assessment of our educational system through a central agency? As Cremin has noted, Rice eventually sank into oblivion:

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[5] J. M. Rice, op. cit., 1902.

[6] "A National Assessment of Educational Progress," announcement from the Exploratory Committee on Assessing the Progress of Education, dated April 23, 1965.

> . . . when he died, in 1934, he was virtually unknown, remembered only -- when at all -- as one of the founders of the American testing movement.[7]

As Rice encountered great difficulty in gaining support for his ideas, he himself offered an explanation for the failure to implement his plan:

> . . . the educators as a body will have nothing to do with my plans, simply because they have not yet forgiven me for some of the things I said of the schools of our country in my series of articles on the Public School System of the United States, published in The Forum some nine years ago. . . .[8]

While this reaction to Rice's educational muckraking, prompted by his own measurements of achievement in spelling and arithmetic, cannot account for the lapse of 60 years, it does suggest the importance within the profession of a favorable climate for reform based on empirical investigation.

Although Rice failed to realize his plans for a national research organization, his advocacy of school surveys for assessing student achievement probably stimulated the development of city and university bureaus. Since these early beginnings, educational reformers and acientists have repeatedly sought to make use of university-based bureaus for testing programs and fact-gathering and, in more recent decades, for investigations of the conditions affecting education. But unlike Rice's program, these efforts have been highly localized and, presumably as a consequence of the need to rely on local resources, highly unstable. As a matter of fact, the turnover rate of research units in schools of education has been exceedingly high since the early decades of the century.

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[7] Lawrence Cremin, The Transformation of the School, New York: Knopf, 1961, p. 8.

[8] J. M. Rice, op. cit., 1902, p. 127.

In order to ascertain the life-chances of research units which have existed in the past, we computed rates of founding and mortality by comparing surveys conducted periodically since 1923.[9] Since each of these surveys provided the names of research units, we are able to chart the birth and death of the units over a period of forty years.

Table 4.3 shows (1) the annual founding rate of new bureaus for each period, (2) the annual rate of mortality for each period, (3) the annual growth rate in the number of bureaus over each period, and (4) the absolute number of bureaus existing at the end of each period, or cumulative frequency.

Looking first at the annual founding rates (Col. 1), we find that the earliest and latest periods have been the most productive of

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[9] Educational Directories, 1923 and 1932, U. S. Office of Education, Washington: Government Printing Office. William Rosengarten, "Organization and Administration of Educational Research in Departments, Schools and Colleges of Education in Universities," Rho Monographs in Education, No. 1, September, 1936. Ruth E. Eckert, "Report on the Organization and Services of Bureaus of Educational Research in Leading American Universities," (mimeo), Office of Educational Research, University of Minnesota, 1949. Data for 1964 was provided by our current study.

TABLE 4.3

Annual Rates of Founding, Mortality and Growth of Educational Research Units for Selected Periods Since 1923*

Periods	(1) Founding Rate (per year)	(2) Mortality Rate (Per year)	(3) Growth Rate (per year)	(4) Cumulative Frequency**
1923-1932	19%	4%	+ 15%	37
1932-1936	3%	15%	- 14%	17
1936-1949	4%	3%	+ 00.5%	18
1949-1964	21%	2%	+ 19%	70 (est.)

*Rates per year represent the average percentage increase or decrease for each year in the designated period. This average rate was computed by dividing the percentage increase or decrease in each period by the number of years in the period.

**The cumulative frequency refers to the total number of bureaus existing in the last year of each period. In the earliest year (1923) there were 16 bureaus of educational research.

new units. Clearly, the organizational developments of the past fifteen years are not altogether unique in the history of educational research. In fact, speaking strictly in terms of organizational founding, it seems that the past is now repeating itself; although, as we shall see in a later chapter, the bureaus which have been recently created are more likely to devote their energies to research rather than to a variety of services for school systems. Nevertheless, the hint of an historical repetition makes it all the more important to examine the factors that led to the sapping of the organizational resources that were available in the early decades of the century.

When we turn to the annual mortality rates shown in Table 4.3 (Col. 2) for each period, we are provided with a clue to one of the major sources of organizational decline, namely, a lack of supportive funds. For it is obvious that the greatest attrition of research units occurred in the depression years, as shown by the average annual mortality rate of 15 per cent between 1932 and 1936. As a matter of fact, this is the only period in which the death rate exceeded the birth rate of bureaus.

But budget cuts in the university cannot entirely explain the demise of research units, for even in non-depression years the death rate has been about 3 per cent annually. Over the entire span of forty years covered by our calculations, this annual rate of attrition would amount to a complete turnover of bureaus. This conclusion is a statistical fiction, of course, since a number of bureaus survived through several decades; but it does highlight the extreme instability of research bureaus in schools of education.

Column 3 in Table 4.3 summarizes what we have observed thus far with respect to founding and mortality rates. The greatest degree of growth in sheer number of bureaus occurred in the earliest and latest periods; the early depression period witnessed a sharp decline in the number of research bureaus; while the period including World War II was characterized by stability. (Since this latter period covers several distinct phases in the economic and social history of the nation, it is unfortunate that our survey dates do not permit more refined study. It is quite probable that the founding of new bureaus was largely confined to the postwar period, while the attrition that occurred was mostly in the late 'thirties.)

Throughout the period covered by the available surveys, new doctoral programs in education were also being founded. In order to determine whether trends in the founding and mortality of units simply reflect the growth of education programs in the universities, it is necessary to compare our figures for units with trends in the founding of doctoral programs in schools or departments of education. Also, by examining changes in the relationship between the life cycle of bureaus and of education programs over the past 40 years, we may be able to draw inferences about the status of these bureaus within the structure of the university. For example, if the depression years affected the bureaus more than they affected programs of education, we would have reason to believe that bureaus are marginal organizations, that is, operations which are readily abandoned when resources become scarce. In effect, we are attempting to measure what might be called "organizational lag," and to relate this lag to conditions existing at the time.

In Table 4.4 we present the number of bureaus and of doctoral programs in education at the time of each survey. Also, we present the rates of growth for units and for doctoral programs. Finally, in Table 4.4, we have computed the ratio of units to doctoral programs for each year.

TABLE 4.4

Ratios of Units to Doctoral Programs in Education in Selected Years Since 1923

Year	No. of Bureaus	% Change	No. of Educ. Doctoral Programs	% Change	Ratio of Bureaus per Doctoral Program
1923	16		26		.61
		131%		130%	
1932	37		46		.80
		-54%		20%	
1936	17		54		.31
		6%		22%	
1949	18		66		.27
		289%		68%	
1964	70 (est.)		107		.65

Between 1923 and 1932, the rate of increase in the number of units was exactly the same as the rate of increase in the number of doctoral programs. (The increase in the number of bureaus was 131% in this period, while the increase in the number of doctoral programs was 130%.) This suggests that *the development of research organizations in the universities was an inherent feature of the early professionalization of education*. In the early period of the depression, however, there was a 20 per cent increase in doctoral programs, but a 54 per cent *decrease* in bureaus. This disparity indicates that many of the units created in the 'twenties were not fully incorporated in the universities, but instead were rather *marginal* operations. In the following period, covering the late depression years, World War II, and the postwar period, doctoral programs continued to be founded at a faster rate than bureaus, i.e., a 22 per cent and a 6 per cent increase, respectively. Thus, the *organizational lag* which had been caused by the depression continued up until the 'fifties. In the past fifteen years, however, the almost threefold increase in the number of bureaus far outdistanced the 68 per cent increase in the number of doctoral programs.

In effect, the organizational lag which developed in the 'thirties and 'forties was eliminated in the past ten or so years. This can be seen quite clearly when we examine the *ratio* of units per doctoral programs in Table 4.4. In 1923, the ratio was .61, and in the following decade it rose to .80. In the next two decades it dropped to .31 and .27, respectively. Then, in the most recent period, the ratio of units to doctoral programs climbed to .65, which is almost exactly the same level as in 1923. After more than thirty years, however, *organizational development still has not regained the level of 1932*.

It should be cautioned that we are here dealing sheerly with numbers of educational research units. Trends in the magnitude and effectiveness of these operations over the span of forty years have not been discussed. Nonetheless, our analysis suggests that research organizations in education have been troubled by institutional marginality, and that this state of affairs has rendered these organizations quite vulnerable to the economic strains which have occurred in the universities and in school systems. Specifically, the consequences have been (1) a high mortality rate, and (2) a severe organizational lag, at least up until the recent past. Lacking a tradition of organizational effectiveness in schools of education, it is likely that the new organizations which have been founded in recent years will have to cope with problems which have only rarely been overcome in the past. In short, *there are few precedents for the successful operation of research units in education*.

Now we shall turn to the present-day constitution of research units as indicated by our survey of directors and try to identify the organizational problems which they confront.

B. Some Major Organizational Dimensions

Although it is impossible to subsume all existing research units under a single definition, there are several major dimensions which can be used to define *types* of units. In Table 4.5 we have classified research units according to each of four dimensions: (1) research orientation, (2) substantive focus, (3) departmental affiliation, and (4) facilitation of non-staff researchers in the teaching departments.

Almost two-thirds of the units are mainly devoted to research rather than to field services, as indicated by the proportion of the budget for research.[10] Only about a third of the units, however, are highly research oriented; which raises the question of the degree and manner in which service and research are separated and the concomitant issue of the possibility of conflict between the two activities. These issues are taken up in Chapter VI where we explore the relation between research and service in some detail.

Almost two-thirds of the units carry out research on a variety of topics rather than specializing in one area. Five units specialize in educational administration or organization (including school finance), and four specialize in curriculum research. Otherwise, there is very little repetition of specialties. Two specialize in talent or creativity of students, and two in special education, while the remaining specialties are represented by only a single unit: school-community relations, teaching as a profession, comparative education, educational technologies, and teacher training research. The full array of topics receiving attention by all the units, including the diversified ones, are presented below.

Most of the units (61 per cent) are not affiliated with any particular department in the school of education. This result suggests that research units tend to be "autonomous" with respect to the teaching departments. The implications of departmental affiliation for relations

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[10] The proportion of the budget devoted to research was found to be related to the performance of a variety of services. (See Table 4 , Appendix C). Hence we use the budget as the most convenient measure of "research orientation."

TABLE 4.5

Research Orientation, Substantive Focus, Departmental Affiliation, and Facilitation of Faculty Researchers (Considered Separately)

Research Orientation (% budget for research)	% units
Low (0 - 49%)	35%
Medium (50 - 89%)	33
High (90 - 100%)	32
	100%
No. of units:	(54)*

Substantive Focus	% units
Diversified	64%
Specialized	36
	100%
No. of units:	(63)*

Affiliated with a particular department in school of education	% units
Yes	39%
No	61
	100%
No. of units:	(64)*

% of researchers associated with unit who are facilitated	% units
0%	42%
1 - 50%	24
51% +	34
	100%
No. of units:	(55)*

*Base numbers vary due to non-response.

with academic departments and for the training of graduate students will be discussed later.

Finally, we observe in Table 4.5 that *a majority of the units (58 per cent) facilitate the research of non-staff faculty members*, and a third of the units are *mainly* facilitating. Thus, while most units are independent of particular departments, the fact that most are facilitative shows that they are by no means disassociated from the teaching faculty. This latter dimension also has an important bearing on interdisciplinary relations and on the training of graduate students in research, also to be discussed later.

To sum up, the research units in our study tend to be devoted to *research* rather than to field services, *diversified* rather than specialized, *unaffiliated* with particular departments, and *facilitating* rather than programmatic.

If we look at each of these dimensions according to the age of the research units included in our study, we are able to note some important historical trends. Table 4.6 shows that *newer units tend to be more research-oriented, more often affiliated with a department, and more often facilitative*. The extent of *specialization* has remained fairly constant.

The trend toward heavier involvement in research has probably resulted in the main from increased federal spending in the past decade. Table 4.7 shows that *the proportion of federal money in the budget of the units is highly related to research orientation*. Only 16 per cent of the units receiving less than half of their funds from the federal government for "studies" are highly research-oriented, compared with 48 per cent of those receiving most of their funds from the government.

TABLE 4.6

Research Orientation, Substantive Focus, Departmental Affiliation, and Facilitation of Faculty Research, According to Age of Research Units

	Age of Unit		
	1-5 yrs	6-15 yrs	16+ yrs
Research Orientation			
50%+ budget for research:	80% (15)	72% (18)	47% (19)*
Less than 50% of personnel providing services to school systems:	55% (11)	41% (17)	38% (13)
Substantive Focus			
Specialized	38% (16)	35% (23)	32% (22)
Departmental Affiliation			
Yes	50% (16)	46% (24)	23% (22)
Facilitation of faculty research			
More than half of professionals are facilitated:	43% (14)	44% (23)	18% (17)

*Base numbers vary because of variation in response to different questions.

The trend towards closer relations with teaching departments, indicated by the greater frequency of facilitation and of departmental affiliation among units founded within the past fifteen years, suggests that bureaus have become less autonomous and less programmatic. If we can interpret this trend as a sign of the decreasing marginality of research units in schools of education, those units which have been founded in the past decade might well stand a better chance of survival than their predecessors.

TABLE 4.7

Research Orientation of the Units According to Proportion of Funds from Federal Government for "Studies" in the Units

	Proportion of Funds From Federal Government	
Research Orientation (% budget for research)	Less than 50%	50% or more
Low (0 - 49%)	40%	26%
Medium (50 - 89%)	44	26
High (90% +)	16	48
	100%	100%
No. of units:	(25)	(19)

The trend towards integration with the teaching faculty might be explained by the decreased dependency of research units on financial support from school systems for services. As a consequence of increased outlays for educational research, it is possible that these organizations have been able to find greater security within the university structure than was true in the past. Undoubtedly they are more often called upon to facilitate faculty members as more research is undertaken in the school. And the prospect that a bureau might increase the chance of gaining research support renders these units highly attractive to departments which are eager to take advantage of growing opportunities. In short, newer bureaus may have grown out of the needs of the university rather than out of the needs of school systems.

If this is the case, then we would expect to find that bureaus which are predominantly devoted to research rather than to service are more often facilitative and more often affiliated with departments.

Table 4.8 shows that this is true. It therefore appears that increasing integration into the teaching departments reflects the rising demand for and ability to support research facilities, thereby partially severing the traditionally strong ties between school systems and bureaus of research.

TABLE 4.8

Facilitation and Departmental Affiliation, According to Research Orientation of the Units

	Research Orientation (% budget for research)	
	Low (0-49%)	High (50-100%)
1. Facilitates faculty	47%	63%
No. of units:	(15)	(33)*
2. Affiliated with a department	37%	43%
No. of units:	(19)	(35)

*Base numbers of percentages vary due to non-response variation

But we need to make an important qualification to the notion that newer units are created with less autonomy than their predecessors. For it is obvious that the Research and Development Centers supported by the U.S.O.E. tend to be highly centralized, programmatic arrangements. What seems to be happening is that the small, traditional bureaus which have relied upon local resources are being converted into facilitating agencies for the faculty; while the better financed, larger organizations are tending toward programmatic autonomy. These two trends may not be unrelated, since the small-scale bureau might well find it difficult to compete with the federally sponsored R & D Centers and Regional Laboratories for professional talent, research assistants, and, especially in those universities where R & D Centers exist alongside bureaus, for additional project funds from the government. In effect, the traditional bureau finds itself in the shade of the R & D Centers, and it would not be surprising if these smaller units wilted in the shadow of these giants.

Interviews with research administrators in several universities tend to support our conclusion that the shift towards integration is a response to national developments. According to our field interviews, one of the oldest and most autonomous bureaus of research in the nation is currently being disbanded in order to facilitate the research of non-staff faculty, and another unit of the same age is being transformed into a coordinative arrangement.

> In 1963 the Dean of the College of Education, Ohio State University, prompted a series of meetings on the organization of the School. These discussions culminated in the decision to disband the Bureau of Educational Research and to transfer the research staff to a new Division of Research and Development, which has teaching as well as research responsibilities. The main consideration in the decision to dismantle the Bureau -- which had been a separately budgeted department in the College of Education for more than forty years -- was the feeling that faculty members who were not attached to the unit felt absolved from engaging in research. By making research an obligation of the entire school, rather than of one special unit, it was hoped that more faculty members would become actively engaged in research.
>
> It is pertinent to the role played by increased federal funds for research in promoting a trend toward facilitation that the Bureau at Ohio State set up an Ad Hoc Division for faculty research in the late fifties. Concomitantly, services dropped from 90 per cent of the budget in 1958 to 10 per cent of the budget in 1964. In the latter year, 93 per cent of the Bureau's research budget was supplied by federal funds.

A somewhat parallel development has taken place at the Bureau of Educational Research, University of Minnesota, also founded more than forty years ago.

The Bureau of Educational Research, University of Minnesota, was originally established "to carry on a modest program of pioneering research in some areas of investigation important to education, to stimulate research among the faculty of the College of Education, and to provide internship experiences for the training of research workers in education."[11] In the years preceding a change of directors in 1957, the Bureau was chiefly devoted to a diversified program based upon the projects of numerous faculty members. When the directorship changed hands, a faculty committee recommended that the Bureau specialize in a particular area of research, namely, creativity of students. As the late Dean Cook explained the new goal of the Bureau, "It is believed that the conduct of such a variety of studies, concentrated in one problem area, over an extended period of time is necessary to accumulate truly meaningful and dependable information and to continue to push knowledge forward."[12]

While a number of significant monographs were produced in the ensuing years, it gradually became apparent that the programmatic focus of the Bureau's research did not provide a broad enough framework for the faculty to carry out its research interests. Further, according to one of our informants, the Bureau's program "implied that the major responsibility of all faculty to do research was relegated to a special group." As a matter of fact, in its later years the Bureau's research program was being carried out exclusively by the Director and several graduate students. The Director, therefore, became overloaded with responsibility for the completion of projects. As the former Director pointed out in an interview, "It got to the point where the worse thing that could have happened was to get a research grant." In sum, the Bureau had shifted from one end of the organizational spectrum to another; but after a period of marked success as a programmatic agency, it was regarded as inadequate to staisfy the new needs of the faculty research community. Organized in a period of "tough research money," it has since become the opinion of the faculty research committee that the Bureau cannot function optimally in a new period of affluence and of mounting demand for educational research.

In light of these circumstances, the Bureau's operations have been temporarily suspended until what was considered a better means of stimulating and coordinating faculty research in the school of education could be found.

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[11] Walter L. Cook, "Organization for Research of the College of Education at the University of Minnesota," (mimeo).

[12] Ibid.

The trends towards facilitation and departmental affiliation on the part of traditional bureaus have several important implications for the future of educational research. Consideration of these implications, together with recommendations for coping with resulting problems, will be deferred to a final chapter of this report.

Before continuing our examination of the organizational features of research units, it is important to look at the substance of the research done in educational research units. We shall see, however, that substance is not unrelated to organizational setting. Following that discussion, we shall continue our exploration of organizational features through an examination of problems of recruitment, the organization of work on projects, and relationships with non-education departments.

C. Research Topics

As noted earlier, almost two-thirds of the research units have a diversified program of research. Table 4.9 reveals the wide range of topics which are currently being investigated by specialized and diversified units combined. For purposes of comparison with research being conducted independently of research units in schools of education, we also show in Table 4.9 the range of research topics currently being investigated outside of these units. (This latter information was collected in our parallel survey of deans and research coordinators in schools of education.)

TABLE 4.9

Topics of Research Inside and Outside of Research Units in Schools of Education

	% research units	% schools doing research outside of units
Tests and measurements	58%	55%
Methods of instruction	52	59
Educational administration and organization	52	54
Reading	31	51
Psychology of learning	31	49
Teacher personality	28	28
Research methodology (other than tests and measurements)	28	26
School-community relations	28	25
Talent, creativity of students	27	36
Social studies curriculum	25	37
School finance	25	37
Special education	22	42
Guidance and counseling	22	64
Mathematics curriculum	20	33
Language arts (other than reading and foreign language)	20	18
Natural sciences curricula	16	29
Child development	16	29
Teaching as a profession	16	22
Adolescent development	14	21
Comparative education	6	32
Foreign languages curriculum	6	14
History of education	5	33
Physical education	2	16
Business and distributive education	--	12
No. of units or schools:	(64)	(76)
Mean no. of topics per setting:	5.5 (64)	8.3 (76)

The much smaller number of researchers within research units than outside of the units accounts for the narrower range of topics found in the bureau setting. As shown at the bottom of Table 4.9, a mean of 5.5 topics per unit are being researched, compared with a mean of 8.3 topics per school outside of these units.

A majority of the research units are engaged in work on tests and measurements, methods of instruction, and educational administration and organization. All other areas are researched by a minority of units. The nine areas most often neglected by the units include three social science areas (teaching as a profession, comparative education, and history of education). Two of these areas, however, are predominantly based on library research. In addition to these areas, child development and adolescent development are also relatively neglected topics of research.

The rank order of topics inside and outside bureaus according to frequency of mention is quite similar (r = .73). There is one large discrepancy which compels our attention, however. Guidance and counseling receives first priority among researchers outside of research units (that is, in terms of the frequency with which the respondents cited at least one such study in their schools), while it ranks thirteenth among research units. Sixty-four per cent of the non-bureau settings are engaged in research on guidance and counseling, compared with only 22 per cent of the bureaus. We are presently unable to explain this particularly large discrepancy between the work being carried out in bureau and non-bureau settings.

A more instructive way of comparing the emphases of research inside and outside of research units is to rank order the percentage differences between work on topics in the two settings. Table 4.10 presents the topics according to this rank order. Also, we have divided the topics into three categories according to the degree of discrepancy (size of percentage difference) between the two settings. Among the topics which are highly characteristic of non-bureau settings (category I) are the two areas previously mentioned as based mainly on library research: history of education and comparative education. Three other areas in this category tend to be psychologically oriented: guidance and counseling, special education, and psychology of learning. The one remaining topic in this first category is perhaps the most researched field in education, i.e., reading.

In the bottom section of Table 4.10 (category III) we find six topics which are studied in bureau settings as often as in non-bureau settings. None of the areas in this category are based on library research, and only one of the topics is psychologically oriented, i.e., teacher personality. (And it is significant that this particular psychological area of investigation differs from the psychological topics characterizing non-bureau settings by focussing on faculty rather than on students.) Finally, two of the topics have an empirical social science orientation (educational administration and school-community relations) and two are methodological subjects (tests and measurements, and other methodology).

These findings lead to the conclusion that investigations in research units are more likely to be related to the empirical social sciences and to be methodologically innovative. It would not seem

TABLE 4.10

Ranking of Research Topics According to the Extent to Which They Are More Characteristic of Research OUTSIDE of Research Units

	% differences between extent of research outside and inside research units*
I	
Guidance and counseling	+ 42
History of education	+ 28
Comparative education	+ 26
Reading	+ 20
Special education	+ 20
Psychology of learning	+ 18
II	
Physical education	+ 14
Mathematics curriculum	+ 13
Natural sciences curricula	+ 13
Child development	+ 13
Social studies curriculum	+ 12
School finance	+ 12
Business and distributive education	+ 12
Talent, creativity of students	+ 9
Foreign languages curriculum	+ 8
Methods of instruction	+ 7
Adolescent development	+ 7
III	
Educational administration and organization	+ 2
Teacher personality	0
Research methodology (other than tests and measurements)	- 2
Language arts (other than reading and foreign languages)	- 2
Tests and measurements	- 3
School-community relations	- 3

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* (+) denotes excess of non-unit research, while (-) denotes excess of unit research.

inappropriate to characterize these concerns as lying on the frontier of educational research.

Similar results pertaining to social science research were found when we examined proposals submitted to the Cooperative Research Branch, U.S.O.E., in 1956-62, according to the setting of the proponents. (See Appendix A, Table 6.) Seventeen per cent of the proposals submitted by applicants in research units were devoted to an investigation of the community context of schools, compared with only 5 per cent of the proposals submitted by individuals who were in no way affiliated with such units. Further, when we compared the disciplines of the principal investigators, we found that 19 per cent of the bureau applicants had social science backgrounds compared with 8 per cent of the non-bureau applicants. (Appendix A, Table 8.) In sum, bureau settings have been more congenial to investigations of the *social* aspects of education, which result is probably explained by the superior facilities for large-scale research afforded by these units. Since this is an area of empirical study which has been seriously neglected in educational research, it follows that research units are in a unique position to undertake pioneering work within schools of education.

Not only are the units more often concerned with the relatively neglected area of sociological aspects, but topics relating to professional activities seem also to reflect a more contemporary outlook. This observation is based upon our analysis of proposals submitted to the Cooperative Research Program in the years 1956-63. Bureau proposals were more often concerned with the newer areas of administrative behavior, remedial students, and talented students, while non-bureau projects more often focussed on the traditional topics of curriculum, instruction, and student achievement (Appendix A - 12).

These consistent differences between the foci of research units and of individual scholars are in marked contrast to the notion that pioneering efforts are most likely to be exerted by the researcher who works independently of a research agency. One of the schools of education in our study has deliberately avoided the establishment of research organizations as a result of this belief. As the dean states in a report on the school's research activities: "Individual research, whether or not it enjoys the benefits of special financial support, represents the growing edge of knowledge in all fields." As well as we can judge from our data, this notion is not supportable with reference to the field of education.

The emphasis on lone scholarship within schools of education has posed a major problem for research units. In the following sections we shall show how the problem is reflected in the directors' efforts to recruit staff members and to promote teamwork.

D. Recruitment and the Problem of Individualistic Research

Our data indicate that recruitment of researchers is one of the most vital and most difficult roles performed by the directors of research units. When we asked the directors to check their responsibilities from an extensive list of roles, 64 per cent checked "securing new staff members to do research," and 70 per cent checked "gaining the assistance of scholars in other departments in the university in planning or executing research." We also inquired of the directors whether they experienced "any difficulty in inducing faculty members in education in your university to undertake studies through your unit." In the response categories we included the option: "No effort is made to induce faculty members." Only 29 per cent of the directors took this option. Thus, from the responses to these items, it is quite clear that most directors are engaged in recruitment activities.

Further, the majority of these directors, i.e., those who make some effort to "induce" faculty members to work in the unit, indicated that they did experience difficulty, and a fifth of them indicated a great deal of difficulty. These results are summarized in Table 4.11.

Another question that we asked confirms the serious problems that confront unit directors in their efforts to attract personnel:

> On the whole, which problem would you say has been more serious in recent years? (Check one)
>
> ___ Obtaining sufficient personnel to carry on the research program.
>
> ___ Providing sufficient opportunities for persons who wish to do research.
>
> ___ Neither of these has been a problem.

Three times as many directors said "obtaining sufficient personnel" was a problem as said "providing sufficient opportunities." The respective percentages were 53 per cent and 18 per cent; the remainder claimed that neither was a problem. In sum, not only do most directors perform recruitment roles, but many experience some degree of difficulty.

Especially disturbing is the fact that recruitment is more often a problem for research than for service-oriented agencies.

TABLE 4.11

Difficulty of Recruiting Faculty from Education to do Research in the Unit

"Do you ever experience any difficulty in inducing faculty members in education in your university to undertake studies through your unit?"	% directors
Some effort is made	
Yes, a great deal of difficulty	22%
Yes, some difficulty	29
No, it does not pose a problem	49
	100%
No. of directors who make an effort:	(41)
No effort is made	29%
No. of directors responding:	(58)

In Table 4.12 we have classified the units according to whether they are predominantly research-or predominantly service-oriented. Clearly, service-oriented units find it easier than research-oriented units to attract professional members from the faculty of education. None of the directors of service-oriented units reported a "great deal" of difficulty, while 27 per cent of the directors of research-oriented units responded in this way. This finding lends weight to the notion that service work competes seriously with research work for personnel. We shall return to this issue in a later chapter when we explore the conflict between service and research in some detail. At present we are mainly interested in emphasizing that research units in education experience a major problem in recruiting individuals to carry on the unit's program.[13]

Our data also provide insight into the sources of recruitment problems which are confronted by research units. Three major sources are clearly identifiable on the basis of the directors' reports: lack of time to do research, lack of interest in research, and among those faculty members who are already undertaking research outside of units, fear of loss of autonomy.

The barriers of insufficient time and lack of motivation to do research are evident in the replies of directors who said they had experienced difficulties in inducing faculty members in education to undertake studies through the unit. Immediately following this latter question, we asked, "What kinds of problems have arisen?" The responses were evenly divided between "lack of time" and "lack of interest in research." Some examples follow:

Lack of time

> They are too busy . . .
>
> Small school of education -- staff members have too many roles.
>
> ... Probably our major problem is to free enough time that faculty can get started on a project. Once projects are under way, one question leads to another and the research tends to be self-perpetuating.
>
> Coordinating their commitments with our schedule demands.
>
> Release time problem.
>
> Lack of time for planning studies.

---

[13] This situation quite naturally affects the amount of time which directors of research-oriented units spend on recruitment. Seventy-one per cent of the directors of highly research-oriented units perform both of the recruitment roles mentioned earlier, compared with only 42 per cent of the directors of predominantly service units.

TABLE 4.12

Proportion of Directors Who Have Difficulty Recruiting Faculty from Education, According to Research Orientation of the Units

"Do you ever experience any difficulty in inducing faculty . . . ?"	Research Orientation (% budget for research) Service Oriented (0-49%)	 Research Oriented (50-100%)
Some effort is made		
Yes, a great deal of difficulty	0%	27%
Yes, some difficulty	45	27
No, it does not pose a problem	55	46
	100%	100%
No. of directors who make an effort:	(11)	(26)
No effort is made	35%	24%
Total no. of directors responding:	(17)	(34)

Lack of interest in research

> They are not interested in research in their own field, (and) they seem to lack ideas for research studies.
>
> Fear loss of security in "teaching." Insecure in research.
>
> This institution has not, historically, done much educational research. Since we are a new Bureau we find it difficult to break the tradition.
>
> Simply will not undertake the research.
>
> Indifference.

The third source of recruitment problems was identified when we asked the directors specifically about faculty members outside the unit who were already engaged in research related to the unit's program:

> "To the best of your knowledge, why have faculty members who are conducting research on topics which are studied by your unit remained unattached to the unit? (Here we are particularly interested in the comparative advantages of outside versus bureau research as seen by the faculty.)

This question, incidentally, was applicable to the great majority of directors, for *79 per cent indicated in our questionnaire that research related to the work of the unit was being conducted in the school of education outside of the unit.*

Desire for autonomy was by far the most frequently mentioned factor in the failure of researchers to affiliate themselves with the unit. Here are some illustrative responses:

> Unwilling to commit their available time to control by unit work schedule. This institution has a high order of individual autonomy in faculty, and a reluctance to forfeit it as a requirement for unit affiliation.
>
> . . . They would have to complete agreements and meet deadlines, (and) they would sacrifice individual place in the "star system."
>
> One has (done research in areas related to the unit's work). He prefers to work independently of the strong interpersonal relationships of the (unit).
>
> This is primarily due to different conceptions of type of research, value of individual versus cooperative research, and control over certain units.
>
> Perhaps they felt that they were more autonomous. May prefer to be lone wolves. . . .
>
> Basic philosophy of departmental function--decentralized philosophy of approach.
>
> Individualism. . . .

The issue of "individualism" versus "control" by research units was also explored on our field trips to various research units in the nation. Interviews with researchers who either desired to remain outside of any established bureau or who rejected the idea of forming their own units tended to bear out the replies of directors to our questionnaire. One respondent who had been collaborating with two other professional persons on a program of research referred to the team's "fifteen years of autonomy" when explaining his opposition to becoming affiliated with a unit which had recently extended the team an invitation to join the staff. In essence, it was feared that the team would fall under the authority of the unit's director and thereby lose morale and identity.

It may be that many researchers who are engaged in informal collaborative efforts reject the notion of establishing a more or less permanent research organization for some of the same reasons that individuals resist association with bureaus as staff members. One such investigator whom we interviewed emphasized the greater career mobility and intellectual freedom which he enjoyed as an independent operator. As he described his present arrangement, which provided employment for fifteen graduate research assistants on three projects: "If I want to crumple it up and put it in my pocket and walk off, I can." He also emphasized that he was working on a frontier area of educational research that required a great deal of exploratory work and, hence, called for a highly flexible research arrangement. It was his conviction that an administrative structure would impel him to devote attention to its sheer survival, thereby interfering with his own research. As he expressed it,

> What happens (as a bureau director) is that you do something, complete the cycle, and then have to go looking for money with hat in hand. If I want to shift or get a related interest, a structure can get in my way.

If the commitment to individual research hampers the recruitment efforts of unit directors, then the same commitment should be evidenced when attempts are made to promote teamwork. Let us turn, then, to the organization of work within research units.

E. Collaborative Research

Our surveys of deans and research coordinators demonstrate the prevalence of individual studies outside of research units in schools of education. According to data collected in our surveys, there are more than three times as many individual investigations outside of units as there are collaborative investigations; within research units, however, there is about an equal balance. These facts can be readily seen in Table 4.13.

TABLE 4.13

The Extent of Teamwork Within Research Units and Outside of Research Units

Mean number of projects in each setting which are:	Within Research Units	Outside Research Units (Only schools with research units)
Single investigators	3.8 (50)	10.1 (26)
Teams	3.2 (50)	3.4 (16)
Ratio of teams to single investigators:	.68	.34

(While only a quarter of the schools did not have a single individual study under way outside of research units, almost half did not have any teams outside of units.)

Since teamwork is much more likely to occur in research units, researchers in schools of education who wish to work independently are confirmed by our data in their conviction that affiliation with research units more often entails collaborative effort. Since there are roughly two and a half professional persons per team, it is clear that team members outnumber individual investigators in research units by about two to one. (We do not assume, of course, that all of the teams which were mentioned by the respondents involve a high degree of interdependency with exclusive attention to a single project. Probably a number of individuals who frequently consult one another on more or less independent projects were included in their replies. But this bias towards inclusion of all projects which could conceivably be counted as a "team" probably operated to an equal extent among deans and research coordinators.)

The replies of the directors to another question about the extent of collaborative effort in the units confirms the distribution of team and individual studies shown above. As seen in Table 4.14, half of the directors said that "highly individualized effort" was the most prevalent mode of research within the unit, while the remaining directors mentioned "diversified team effort" and "consolidated team effort" to about an equal extent.

Of greater interest in Table 4.14 is the fact that very few directors prefer "highly individualized effort." Among those who stated a preference, teamwork was mentioned by the great majority. Finally, we observe in Table 4.14 that only a fourth of the directors do not care whether the prevalent pattern is collaborative or individualistic.

Since teams occur more often within research units, and since directors tend to prefer collaboration, it is possible that directors may exert a certain amount of pressure on the personnel associated with research units to undertake joint investigations. There is a way of answering this question.

If we classify directors according to their preferences, and then observe the prevalent mode of research within the units according to the preferences of the directors, we find a close fit between the

TABLE 4.14

Prevalence of Teamwork and Preference of Directors of Research Units*

Research projects are organized in several ways. Which of the following types of research effort would you personally *prefer* that persons associated with your unit engage in, and which type would you say is most *prevalent* in your unit at the present time?

	Most Prevalent	Prefer
Highly individualized effort -- each researcher pursuing his own line of inquiry independently.	48%	13%
Diversified team effort -- two or more members cooperating in inquiry related to but concerned with different dimensions or facets of the same problem.	24	28
Consolidated team effort -- two or more members cooperating in inquiry on the same facet of the same problem	28	33
No particular preference	--	26
	100%	100%
No. of units or directors:	(54)	(54)

*The categories in this table were gratefully borrowed from Raymond J. Young, *A Directory of Educational Research Agencies and Studies*, Bloomington: Phi Delta Kappa, 1959.

desires of directors for teamwork and the prevalence of teamwork. This finding is disclosed in Table 4.15.

Because of the relationship between the directors' preferences and the prevalent mode of organizing work within the unit, it is possible that the directors do exert some influence. Still, there is clear indication in Table 4.15 that a large proportion of the directors do not have the amount of teamwork that they would prefer to have in

TABLE 4.15

The Prevalence of Individualized and Collaborative Effort Within Units According to the Directors' Preference

Most prevalent:	Preferred: Highly Individualized	 Diversified Teamwork	 Consolidated Teamwork
Highly individualized	72%	53%	28%
Diversified teamwork	14	40	17
Consolidated teamwork	14	7	56
	100%	100%	100%
No. of directors:	(7)	(15)	(18)

their units. Specifically, half of the directors would like to see more or closer collaboration than exists. Thus, if they do try to exert influence on personnel to engage in joint enterprises, it seems that about half the time they are ineffectual in bringing it about. The emphasis on independent work, therefore, seems also to characterize many research units despite the preference of their administrators for closer collaboration.

To be sure, there are barriers to collaboration besides the sentiments of investigators. It is sometimes difficult to find congenial or able colleagues. And, too, there is the problem of finishing up individual projects at a time which is mutually convenient for colleagues to begin working together. And team projects are more costly and require more advanced planning. We cannot assume, therefore, that the norm of independent scientific endeavor is the sole barrier standing in the way of increased collaboration. As a matter of fact, when Barton and Wilder asked a large population of reading experts whether they preferred to work in teams or to work independently, roughly equal proportions preferred each pattern. Further, the *majority* of reading experts who had done a fair amount of *research* since the dissertation preferred to collaborate.[14] When we contrast this picture of *preferences* with the *prevalence* of individual research in schools of education outside of research units, we are led to the conclusion that the desire of many researchers for collaboration is going unmet.

There are grounds for believing that an individualistic approach to research is somewhat peculiar to education. Our survey of authors of empirical research articles on education published in the journals in 1964 reveals that *65 per cent of the authors who did their research in graduate schools of education published alone, compared with 49 per cent of the authors from the liberal arts and sciences.* In sum, there is very good reason to believe that schools of education support a unique climate of highly individualized research effort. From evidence presented earlier, it also seems that research organizations play a vital role in the promotion of collaborative work in this individualistic climate; and it may be true also that directors are the key figures in stimulating joint research.

When we explored this issue with bureau directors in the course of our field trips, we were informed that one of the main sources of "individualism" on the part of educational researchers was *pressure to achieve recognition as a means of institutional advancement*. Several informants pointed out that greater notoriety accrued to scholars who published their work exclusively under their own name. As one director expressed it: "People don't want to join in team efforts because promotion is based on individual research." Another summarized his remarks about the reward system of his own university by noting that "the pressure is for individual productivity." In one of the universities that we visited we learned that a junior faculty member who had sought permission to supervise doctoral dissertations in education was turned down by the administration expressly because all of his publications had been published jointly. In still another university we talked to a dean of education who was faced with the serious problem of promoting one of four associate professors who had always published their research jointly. The dean was unable to decide which of the four should receive the promotion because he could not discover who had been the most productive individual. One solution which seemed feasible to him was to leave the decision up to the team members themselves. In effect, the traditional criteria of promotion had become inapplicable, and so the formal authority structure broke down: individual publication could no longer be relied upon to determine promotion, so the team may have to do its own promoting.

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[14] David E. Wilder, "The Reading Experts: A Case Study of the Failure to Institutionalize an Applied Science of Education," Ph.D. dissertation, Columbia Univ., 1966.

No doubt this situation also prevails in the liberal arts and sciences; but it is possible that it is more characteristic of schools of education. Research is not only marginal to the main concerns of professional education, but it is highly segmentalized because of the many fields, disciplines, and specialties represented, each of which is preoccupied with research in its own area. Marginality has probably interfered with the emergence of a strong "reference group" of research scholars which bridges many schools. In the absence of an inter-institutional intellectual climate, educational researchers would understandably remain oriented to the local institution. Thus, they might see their fate more often in terms of advancement within the teaching hierarchy than in terms of enhancement of their reputation among a national community of scholars. Under these circumstances, the visibility of individual productivity would count for more than the possibly superior quality of collaborative efforts. This idea is highly inferential, however, and information would have to be collected from researchers themselves in order to verify it.

There is another way in which marginality might reduce the amount of collaboration in schools of education. A "marginal" activity within an organization is one which has to compete with a number of other activities which make prior claims on the member's time. In schools of education, the research role is but one of a variety of more important roles which professors are required to perform. It is possible that the development of collaboration requires fuller commitment to research than is typical of the education professor. The intention to spend a substantial amount of time on a study might well be a qualification for joining a team, since the fate of each team member depends upon the willingness of the others to devote a good share of their time to the project. In view of the many competing demands upon the time of professors of education -- e.g., pre-service and in-service teaching, advice to school systems, administration, conferences, workshops -- it may be difficult to find individuals who are able to meet the requirements of a joint research effort.

Finally, departmentalism within schools of education might reduce the amount of collaboration by putting the hurdle of departmental or divisional boundaries in the way. In effect, a collaborative effort is often required to be an inter-departmental effort. This is a problem which does not confront liberal arts departments which provide enough research personnel within the department to permit the emergence of teams.[15]

To sum up, it might be that marginality of research and departmentalism in schools of education reduce collaborative effort below the level of the behavioral sciences, as well as creating a barrier to the recruitment of personnel by research units. In our final chapter, we shall include some recommendations for overcoming these barriers.

Thus far, we have looked at research units only in relation to the school of education. In the following section, we shall examine the relationships of these units with departments outside of education.

F. Relationships with Non-Education Departments

It is not the case that research units in education are manned exclusively by "educationists." Although staff members are mainly drawn from education, approximately a quarter of the new staff members in recent years have come from behavioral science departments. This finding is based on the following question addressed to the directors:

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[15] We are indebted to Dean Rupert Evans, University of Illinois, for this particular explanation.

> Approximately what proportion of the professional staff of your unit in the past three years were recruited from the following sources?
>
> ___Behavioral science departments outside of your university.
>
> ___Behavioral science departments within your university.
>
> ___Schools or departments of education outside your own university.
>
> ___The school or department of education within your own university.
>
> ___School systems.

Table 4.16 shows that about a third of the recruits on the average were drawn from the local school of education. And it is highly suggestive of the barriers between education and the liberal arts and science departments that a larger proportion of the recruits came from other schools of education than from behavioral science departments within the home university. An average proportion of 19.22 per cent of the recruits came from education departments in other universities, while an average proportion of 14.83 per cent came from behavioral science departments in the same institution. This suggests that there are stronger ties between different schools of education in the nation than there are between schools of education and other departments within the same university. The fact that spatial barriers place less restriction on mobility of personnel than do disciplinary barriers testifies to the serious problems which exist for interdisciplinary work on education.

Recruitment of personnel from the liberal arts and sciences may be the most important means whereby research units in education are infused with concepts and approaches from local non-education departments, for involvement through other means seems to be quite minimal. Although 79 per cent of the directors were aware of projects in

TABLE 4.16

Sources of Recruitment of Professional Staff in Research Units in Past Three Years

Source of Recruitment:	Mean % of ew Staff Members Recruited in Past Three Years	
School or dept. of education		
Inside the university	34.65%	(46)*
Outside the university	19.22%	(46)
Behavioral science depts.		
Inside the university	14.83%	(46)
Outside the university	11.35%	(46)
School systems	11.59%	(46)

*The number in parentheses represents the base number of units used for computing mean percentages.

non-education departments in their university which were related to the unit's program of research, most commonly their contacts with these projects were through informal conversations. (Two-thirds of the directors who knew of such projects mentioned this line of communication.) Almost as many, however, indicated consultative relationships, which shows that more formal types of communication do occur. But since less than half said that they exchanged results with these non-education projects, it sounds as though consultations may be somewhat superficial, or at least discontinuous. Finally, less than a fifth of the directors said that there was any exchange of personnel between cognate projects in the unit and in non-education departments. (Since these distributions of responses are based on replies to a free-answer question, we do not show them in tabular form. They are merely offered here as suggestive of the extent of informal versus formal interchange with the liberal arts and sciences.)[15a]

When we asked specifically about various types of formal arrangements with academic departments and with other professional schools, we found that consultation was the most frequently cited interchange, as seen in Table 4.17. Slightly more than half of the units (56 per cent) maintain contacts with academic departments through this avenue, and less than half (40 per cent) maintain contacts with other professional schools in this way. The remaining arrangements were mentioned much less frequently and to about an equal extent, with the exception of "visiting professors from other universities for research." Only 19 per cent of the units have such persons from academic departments, and only 14 per cent have them from professional schools. On the average, there are only 2.04 joint arrangements per unit with academic departments (out of the six arrangements listed), and only 1.21 with other professional schools. In short, formal joint arrangements of the kind mentioned in this question are relatively rare among research units in schools of education. Since a sizable majority of the directors mentioned "informal conversations" with directors of cognate projects outside the school of education, it seems evident that informal contacts are far more frequent. We conclude from these data that substantial opportunities for interdisciplinary contacts are not being taken advantage of by the research units.

It is true, however, that the extent to which joint arrangements are worked out with academic departments depends upon the research orientation of the units. Units which are most heavily involved in research are considerably more likely than other units to maintain

[15a] The greater frequency of informal contacts is borne out by Brown's study, *op. cit.*

TABLE 4.17

Existing Arrangements of Research Units with Academic Departments Outside the School of Education, and With Other Professional Schools

Joint Arrangements	Exists with Academic Depts.	Exists with Professional Schools
Consultation on specific studies	56%	40%
Interdisciplinary committees or seminars which are concerned with scholarly issues	35	19
Joint research appointments	32	16
Joint research publications	28	16
Interdisciplinary conferences	25	18
Visiting professors from other universities for research	19	14
No. of units:	(57)	(57)

relations with the liberal arts and science disciplines; but less likely to maintain relations with other professional schools. Table 4.18 contains several measures of involvement in interdisciplinary contacts, including two of the questions discussed above, according to the research orientation of the units.

Looking at Table 4.18, we find that in research-oriented bureaus the mean number of joint arrangements with *academic* departments is *higher* (line 1), but the mean number of joint arrangements with *professional* schools is *lower* (line 2). This suggests that *interchanges with other professional schools tend to be oriented to developmental concerns rather than to empirical research*.

TABLE 4.18

Interdisciplinary Relationships According to Research Orientation of Units

	Research Orientation (% budget for research)		
	Low (0-49%)	Medium (50-89%)	High (90% +)
1. Mean no. of relationships with academic departments (out of 6 possibilities):	1.4 (14)	2.0 (15)	2.8 (16)*
2. Mean no. of relationships with professional schools (out of 6 possibilities):	1.5 (14)	1.4 (15)	1.1 (16)
3. % senior research personnel associated with unit who are teaching in academic departments is more than 25%:	6% (16)	15% (13)	38% (16)
4. % students associated with unit who are from non-education departments is more than 25%:	36% (11)	56% (16)	64% (11)
5. Mean % of professional staff recruited from various sources in past three years:			
School or dept. of education			
Inside the university	32.19%	36.06%	35.86%
Outside the university	40.19%	6.13%	10.21%
Behavioral science depts.			
Inside the university	4.69%	12.56%	29.00%
Outside the university	5.94%	14.19%	14.29%
	(16)	(16)	(14)

*Numbers in parentheses represent the base of means or percentages, and vary because of non-response on different questions.

We also learn from Table 4.18 (line 3) that research-oriented units are much more likely to have a high proportion of staff members who are _teaching_ in academic departments. It is not surprising, then, that these units also contain a larger proportion of _students_ from non-education departments (line 4). Finally, we see that research-oriented units more often recruit staff members from behavior science departments both inside and outside the university (line 5).

What is particularly interesting in Table 4.18 is the fact that _highly_ research-oriented units recruit more personnel from _behavioral science_ departments outside as well as inside the university than from _education_ departments _outside_ of the university. In other words, these units have not only managed to overcome the interdisciplinary barriers within the university, but they have shifted the frame of reference from the national structure of professional education to the liberal arts and sciences. Only those units which are chiefly engaged in service activities maintain strong ties with professional education.

Since we saw earlier that _research_-oriented units have been founded more recently, it is possible that there has been a parallel trend toward greater association with the basic disciplines. As a matter of fact, this trend is quite evident in Table 4.19, where we show the mean number of arrangements with academic departments, and also the proportion of researchers associated with the unit who are teaching in academic departments, according to the age of the units.

There is little question but that the newer educational research units have more extensive interchange with the liberal arts and sciences. This suggests to us that _educational research units are_

TABLE 4.19

Mean Number of Relationships with Academic Departments Outside the School of Education According to Age of the Unit

	Age of Unit		
	1-5 yrs	6-15 yrs	16 yrs+
Mean no. of relationships with academic departments (out of 6 possibilities):	2.25	2.24	1.57
No. of units:	(14)	(24)	(26)
% researchers associated with unit who are teaching in academic departments is more than 25%:	45%	14%	0%
No. of units:	(11)	(21)	(18)

more and more providing an avenue of exchange between education and the basic disciplines.

There are two organizational dimensions of research units which seem to facilitate contacts with the liberal arts and sciences. Table 4.20 shows that facilitating units and those not affiliated with particular departments are more likely to have joint arrangements, but that substantive focus is unrelated to number of joint arrangements. Thus, units which might be called "free floating" within the school of education are more likely to serve as meeting grounds for scholars from various fields and disciplines.[16]

Since we have already observed that facilitating units and non-affiliated units are more likely to be research-oriented, we cannot yet conclude that these organizational dimensions are important

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[16] More detailed analysis, not shown here, demonstrates that each of these dimensions is related to number of joint arrangements independently of the other.

TABLE 4.20

Mean Number of Relationships with Academic and with Professional Departments Outside of Education, According to Facilitation, Departmental Affiliation, and Substantive Focus

	Mean no. of Relationships per Unit with:			
	Academic Depts.		Professional Schools	
Facilitation (% facilitated)				
High (51% +)	2.76	(17)	1.65	(17)*
Medium (1-50%)	2.23	(13)	1.70	(13)
Low (0%)	1.40	(20)	0.90	(20)
Departmental Affiliation				
Yes	1.52	(23)	1.09	(23)
No	2.32	(34)	1.29	(34)
Substantive Focus				
Specialized	2.06	(18)	1.22	(18)
Diversified	2.09	(33)	1.24	(33)

*Numbers in parentheses are the base numbers of bureaus used for computing means.

determinants of the amount of interdisciplinary contact independently of substantive emphasis. In order to settle this issue, we need to look at the relationships between organizational features and interdisciplinary arrangements within levels of research orientation. Table 4.21 provides the pertinent information for relations with academic departments. And here we see that each of the organizational dimensions is associated with the number of joint arrangements with academic departments regardless of research orientation.

TABLE 4.21

Mean Number of Relationships with Academic Departments According to Departmental Affiliation and Facilitation, within Levels of Research Orientation

	Research Orientation (% budget for research)					
	Low (0-49%)		Medium (50-89%)		High (90% +)	
Departmental Affiliation:						
Yes	1.00	(7)	0.80	(5)	2.33	(9)*
No	1.71	(7)	2.50	(10)	3.28	(7)
Facilitation (% facilitated):						
High (51% +)	3.25	(4)	3.00	(7)	3.00	(9)
Medium (1-50%)	-	(0)	1.50	(6)	3.00	(4)
Low (0%)	0.43	(7)	0.00	(2)	2.56	(9)

*Numbers in parentheses are the base numbers of units used for computing means.

In sum, while units which are devoted to research rather than to services are more attractive to behavioral science scholars (for reasons which seem obvious), *structural relationships with the school of education are equally important in furthering interdisciplinary contacts*. Units which are neither integrated with education departments nor pursuing their own programmatic interests are most likely to engender these contacts. (Highly facilitating units which are not affiliated with a department have an average of 3.44 joint arrangements out of the six listed in our questionnaire.) Presumably, the greater programmatic flexibility of these units, and the absence of identification with a traditional teaching department in the school of education, combine to render these organizations most suitable to the needs and interests of scholars in the behavioral sciences.

G. Summary and Conclusions

It is quite clear that the organizational upswing of the past decade is not unique in the history of educational research. In the 'twenties there was a sharp rise in the founding rate of bureaus, and even as early as the turn of the century, J. M. Rice was advocating the establishment of a national bureau of educational efficiency. As a matter of fact, the ratio of bureaus to graduate programs of education reached its highest point more than thirty years ago, before dropping precipitously with the onset of the depression. Even recent organizational developments have not been as widespread among schools of education as in the late 'twenties, as measured by the ratio of bureaus to graduate programs in education in 1932 and 1964. While the extremely high mortality rate associated with the depression reminds us of the importance of external social conditions, the high mortality rate which has characterized even non-depression years points to institutional marginality, or to weaknesses internal to the school of education and to the units themselves. Thus, in terms of organizational success, there are probably few precedents which can be relied upon for the direction of future policy.

There is evidence, however, that research units are gradually becoming more integrated with the university. Not only have they become more committed to doing research rather than to providing services for local schools -- which might be considered a form of intellectual integration into the university -- but they have also become more organizationally integrated. Thus, newer units are more often affiliated with particular departments and more often facilitative for non-staff faculty. One of the main forces behind the trend towards closer integration with the university has been the availability of federal funds. In other words, research bureaus have become less dependent upon funds from local school systems for their continuance. Also, faculty members are more often able to obtain research support, and many may turn to the research units for facilitation of their studies.

On the other hand, we are aware that large Research and Development Centers are being founded with considerable autonomy within the universities. Perhaps we are witnessing the incipient stages of a polarization of organizational forms. The traditional programmatic bureaus could eventually wither away under the onslaught of competition with the R & D Centers, and under pressures from non-staff faculty members for routine help in carrying out studies. (It should be borne in mind, however, that at the time of our survey most research units still pursued their own program of research rather than facilitating non-staff faculty, and most were still independent of particular departments.) The possible decline of small, autonomous bureaus needs to be evaluated in the light of the relatively unique contributions of these organizations to the advancement of educational scholarship. The evidence which we have presented thus far suggests that these contributions have been substantial.

With respect to substantive areas of research, research units are more inclined to attack problems on the frontier of education. When we compared the topics being studied inside and outside of units, we found that the units were more oriented to the social sciences rather than to the traditional educational discipline of psychology.

In particular, they are more likely to investigate the social contexts of education and the organization of educational systems. And even when it becomes a matter of educational processes, the units tend to concentrate on more "contemporary" subjects.

Another major contribution of research units is the furtherance of collaborative research in a profession which has tended to stress individual studies. There are several reasons why teamwork is more prevalent within organizations. First, research units are able to overcome the twin barriers of substantive segmentation and institutional departmentalism which characterize the teaching departments. In effect, they provide a setting in which a more closely knit community of scholars can emerge. Second, research units effectively combat the marginal position of research in schools of education by affording a value climate in which research is often the primary objective. And fuller commitment is probably an important condition for the emergence of collaborative endeavors. A third reason that teams are more often found in bureaus is that bureau studies are of greater magnitude, requiring a combination of skills and specialties. (The greater magnitude of bureau projects is suggested by our analysis of the proposals submitted to the U.S.O.E. as well as by other considerations. As seen in Appendix A, Table 3 (p. A-9), the planned duration of bureau projects is somewhat longer than that of non-bureau projects. Further, the fact that bureaus more often study the organization and the social context of education indicates that their projects are administratively more complex.) A final reason for the development of teams within research units may be that the directors themselves exert influence in behalf of teamwork. This result is suggested by the strong relationship between the directors' preference for collaboration and the prevalence of joint research in the units.

Another major contribution of research units might lie in their promotion of interdisciplinary research. As we have shown, the newer the unit, the greater the number of joint arrangements with the liberal arts and sciences. Quite possibly it is the dissociation from the teaching departments which makes the units more attractive to scholars outside the school of education. (Bureaus which are related to a particular department have fewer relations with the arts and sciences, which shows that some degree of autonomy from the educational divisions is necessary; but facilitating bureaus have more relations, which suggests that bureaus should not be entirely insular either.)

These are only a few of the advantages of research organizations revealed by our data. Other advantages, such as the training of researchers, will be pointed out in later chapters. In sum, it would be unfortunate if many small-scale research units were replaced by a relatively few large-scale ones like the R & D Centers.

Incidentally, these remarks on the contributions of research organizations to the advancement of educational scholarship serve to remind us that these agencies may have important consequences for their environment which cannot be gauged simply by looking at their "units of research output." If the significance of these organizations were assessed solely in terms of the quality and applicability of their research, some of their most salutary functions would be overlooked. In the language of sociological theory, we need to assess their "latent" as well as their "manifest" functions -- or, their unplanned, long-run consequences for educational scholarship as well as their rationally intended, short-run consequences represented by the completion of particular research projects.

These points underscore the importance of identifying the barriers to greater effectiveness of research units in education and also the leverages for improvement which they have at their command. In the following chapter we take up the role of the unit director as a critical innovation in the organization of higher education, and particularly as a major instrument for effective change in the operations of research organizations. Following that discussion, we explore one of the major barriers to the advancement of a science of education -- the problem of educational services -- where special attention will be paid to the impact of service pressures on research units.

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CHAPTER V

THE MANAGERIAL SCHOLAR

The position of a director of a research organization is a highly interesting innovation in the history of higher education, for it represents a coalescence of roles which have tended to drift apart as a consequence of the growing size and complexity of universities. Essentially, it brings together administrative expertise and intellectual enterprise in a period when faculty members are reluctant to become involved in administrative tasks, on the one hand, and when administrators are anxious to recognize the intellectual autonomy of the faculty, on the other. What seems to be happening is that academic freedom is more and more interpreted in such a way as to keep the administration out of any truly academic affairs; while the faculty has come to consider administration beneath its dignity. But educational innovations are, by definition, intellectual as well as administrative tasks. And so, they have fallen into a no-man's land: the President and his staff wait for the faculty to take the initiative; the professors on their side consider that such matters would take time away from their truly scholarly pursuits. As a result, many of our universities have a dangerously low level of institutional development.

The problem of developing the managerial scholar is part of the larger issue of the university's failure to encourage leadership in general. As John Gardner has recently observed:

> . . . students learn to identify themselves strongly with their calling and its ideals. They acquire a conception of what a good scholar, scientist, or professional man is like.

> As things stand now, however, that conception leaves little room for leadership in the normal sense; the only kind of leadership encouraged is that which follows from the performing of purely professional tasks in a superior manner. Entry into what most of us would regard as the leadership roles in the society at large is discouraged.
>
> . . . the academic world appears to be approaching a point at which everyone will want to educate the technical expert who advises the leader, or the intellectual who stands off and criticizes the leader, but no one will want to educate the leader himself.[1]

Since the managerial scholar performs a leadership function which is sorely needed in the universities, as well as in other important segments of our society, the purpose of the present chapter is to describe and assess this unique role in some detail. We shall pay attention to several issues: (1) the critical position of the directors in the operation of research units; (2) their unique opportunities for intellectual leadership; (3) the leadership styles of directors; (4) the formal authority of directors and the stereotype of the "empire builder"; and (5) the comparative value of unit directors and faculty research coordinators.

A. The Critical Role of Directors in the Development and Maintenance of Research Units

An investigation of the histories of Research Units highlights the important contribution of directors to the survival and success of their organizations. In particular, the development of bureaus at Ohio State University, University of Minnesota, Columbia University, and University of Illinois demonstrate the impact of a change of directors on the units' goals and activities. Since we describe the histories of these organizations in some detail in the following chapter on the conflict between service and research, we shall not duplicate these case histories here. Instead, we shall draw upon the questionnaires received from the sixty-four directors in our study.

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[1] John W. Gardner, "The Antileadership Vaccine," Annual Report of the Carnegie Corporation of New York, 1965, p. 10.

First, let us examine the responses of the directors to the following question:

> Would you briefly describe any highly significant turning points in the course of the units' history -- for example, the appointment of a new director with different ideas about the program, the influx of new funds, the appointment of a new president or dean, the beginning of an important new research project, etc.?

While changes in the administration of the school were mentioned by several respondents, the turning point most frequently mentioned was the appointment of a new director. The following responses are typical:

> The most significant turning point was the appointment of ____________________ who in 1948-54 stabilized the publication program of the School of Education. He also formally organized the procedures for conducting school surveys, assumed responsibilities for research, and created a more independent unit. Through his professional competence and excellent background he brought professional status to the position of director.
>
> The present director is more interested in classroom rather than laboratory research, i.e., testing of theory in classrooms. Basic objectives of present director assume a commitment to public education and attempts to improve it through research, not just service.
>
> The Institute was primarily the idea of one woman who obtained a grant to establish it. The faculty were against the idea and the appointment of the first director was a disaster. . . . The Institute director resigned and a new one with a name in sociology was appointed. He exerted less pressure on faculty either to do research, participate in research, or to bring their research under the aegis of the Institute. He was primarily involved in his own research and made no effort to develop a real institute or bureau of research. However, his tenure had one beneficial effect; namely, to reduce faculty hostility toward the Institute.

> . . . in 1957, ________________ was appointed Principal of the school and his ideas about how a lab school should be run have greatly influenced the total program.

In these selected responses we can discern at least four ways in which bureau directors may substantially affect the development of their units: by reorienting the program of the unit, by enhancing the prestige of the unit, by creating a more autonomous organization, and by improving public relations with the faculty. Conversely, they may also permit the bureau to wane. In addition, these excerpts alert us to variations in the leadership styles of directors, to be discussed in detail later on.

After asking the respondents about the most important turning points in the unit's history, we inquired about the individuals, groups, or agencies which had been "most influential in setting the current goals of the unit." More than half of the respondents (56 per cent) mentioned either themselves or one of the former directors as being most influential. By contrast, a university administrator was mentioned by only 25 per cent. Of particular interest is the fact that the directors of research-oriented units are especially influential in setting the goals of their organizations. Table 5.1 shows that 69 per cent of the directors of highly research-oriented units cited themselves as being influential in setting current goals, compared with only 11 per cent of the directors of service-oriented units. These results testify to the vital function being performed by managerial scholars in promoting educational research as distinguished from educational services.

TABLE 5.1

Goal Setting of the Director According to Research Orientation

Of all those involved in the founding and operating of the unit, what person, group, or agency has been most influential in setting the current goals of the unit:	Research Orientation (% budget for research) Low (0-49%)	Medium (50-89%)	High (90% +)
The present director:	12%	44%	73%
No. of units	(17)	(18)	(15)

There is still another question in our survey which bears on the director's contribution to the development of his unit. The question was as follows:

> Since becoming the director, have you introduced any innovations in terms or organization or activities? If so, please describe them briefly.

Although we might expect the respondents to exaggerate their contributions to the unit's work in response to this question, if we consider the magnitude of the innovations cited it becomes clear that many directors have substantially affected their organizations. The innovations which they mentioned include: interdisciplinary research; the training of students; the separation of field services and research; the provision of consultation services to the faculty; the setting up of workshops, seminars, and colloquiums; the formulation of a constitution and by-laws; the reduction of teaching loads of staff members; the founding of special research divisions within the bureau; and expansion of the staff. The majority of directors mentioned innovations of the magnitude of those cited.

It is conceivable that research organizations in general are more dependent on the policies of their directors than other types of organizations. Staff members are probably reluctant to become involved in administrative matters, and are therefore willing to confer a good deal of policy-making authority on the unit's administrator. In exchange for this bestowal of power, the director is probably constrained to observe the intellectual independence of staff members. In other words, there may be a fairly equal exchange of authority. Now let us turn to a more detailed consideration of the specific roles performed by directors.

B. Opportunities for Intellectual Leadership

The reluctance of scholars to assume administrative roles is often premised on the belief that a formal position of leadership in the university seriously interferes with one's intellectual life. It could be argued, however, that directing a research organization is no more in conflict with scholarly work than is teaching. The director is faced with a variety of research problems which permit him to try out his intellectual taste and skills, while the individual scholar might find himself committed to a study prematurely chosen. The multitude of data passing through the director's hands can considerably broaden his experience; staff conferences can provide a unique sounding board for new ideas; even negotiations for grants can open vistas into other worlds which a researcher can turn to great use in his own work.

It is true that research directors need to perform important administrative duties in order to keep the unit alive, but it is equally true that they must give considerable attention to developing and sustaining the *intellectual* life of the organization. It is the combination of these two roles which distinguishes the "managerial scholar." And while there is room for conflict between administration and intellectual leadership, there is also much room for accommodation. Thus, it is certainly *not* the case that administrative responsibilities usurp most of the time of research directors. When we asked the respondents to indicate the three activities to which they devoted *most* of their time, we found that *intellectual activities are performed more often than administrative activities*. This conclusion is drawn from Table 5.2, which shows the distribution of directors on the check-list of twenty-four possible activities included in the questionnaire.

Fifty-seven per cent of the directors said that they spent most time on at least one *intellectual* activity, while 37 per cent said that they spent most time on at least one *administrative* activity. The two intellectual activities which were most frequently mentioned were "assisting staff members with analytical problems which arise in their research" (29%), and "assisting staff members in writing proposals" (21%). The administrative activity most often mentioned was "seeking funds for researchers" (16%). These results do not bear out the common assumption that bureau directors are chiefly administrative agents whose intellectual life is severely restricted by their directorial duties. To repeat, the nature of a research organization requires the director to maintain an *intellectual climate*, and in doing so he has many opportunities to enrich himself as a scholar.

When it becomes a matter of carrying out his own research, however, the duties associated with the directorship do sometimes interfere. As a matter of fact, *more directors say that their duties*

TABLE 5.2

The Roles Most Often Performed by Directors of Research Units

Organizational Roles	% Saying Role is Among Those Most Often Performed*	
Intellectual Activities		
Assisting staff members with analytical problems which arise in their research	29%	57% at least one activity
Assisting staff members in writing proposals	21%	
Facilitating communications among researchers	14%	
Judging the adequacy of research proposals written by individuals associated with unit	10%	
Formulating the goals of a research program	10%	
Encouraging staff members to undertake research which is of general interest to scholars in education	8%	
Administrative Activities		
Seeking funds for researchers	16%	37% at least one activity
Providing facilities for researchers	11%	
Communicating the needs of the research program to the administration	11%	
Negotiating with or reporting to funding agencies	10%	
Collecting and disseminating information about financing of research	8%	
Budgeting for the unit as a whole	6%	
Other (not classifiable above)		
Encouraging individuals associated with your unit to undertake research which is of immediate help to schools	10%	
Gaining the assistance of scholars in other departments in the university in planning or executing research	5%	
Handling problems of interpersonal relations among staff members	3%	
Encouraging researchers in the university who are not associated with your unit to become associated in some way	2%	
Own Studies		
Conducting your own research	41%	
Directing or facilitating service studies for schools in the area	19%	
	234%	
No. of directors:	(63)	

*The respondents were instructed to list no more than three roles to which they devoted most of their time. Hence, the total per cent exceeds 100 per cent.

had interfered with their own research than say that the position had helped them. This conclusion is derived from the following question:

> On the whole, would you say that the duties associated with the directorship have *hindered* or *helped* your own research?
>
> ___Hindered
> ___Helped
> ___There has been no appreciable effect one way or the other

About half of the directors (48 per cent) claimed that their duties had "hindered" their research, while a fifth said there was "no appreciable effect," and a third said they had been "helped."

Despite the larger percentage who said the position had hindered their research, it is quite important to recognize that the hindrances are not *inherent* features of the position. For several conditions determine whether the position becomes a hindrance or an asset to the director's own work. First, directors of units which *specialize* in a particular research area are *more often helped* in carrying out their own research, as shown in Table 5.3. It is mainly in the diversified units that difficulties arise; and as mentioned earlier, most units are diversified in substantive focus. What this result indicates is that *directors who do not share a universe of discourse with their staff are less likely to receive stimulation for their own work*.

The importance of *interaction with staff members* in contributing to the director's own research was clearly revealed in responses to the following question:

> In what ways have your duties hindered or helped your own research?

Directors who claim to have been *helped* in their research frequently

TABLE 5.3

Contribution of Directorship to Own Research, According to Substantive Focus of Unit

Have duties associated with directorship hindered or helped own research?	Substantive Focus of Unit: Specialized	Substantive Focus of Unit: Diversified
Helped	44%	24%
Hindered	35	58
No effect	22	18
	101%	100%
No. of directors:	(23)	(38)

mentioned the intellectual stimulation from colleagues as a contributive factor. Here are some illustrative replies:

> The opportunity to exchange ideas with those having similar interests has been invaluable. In fact, merely having them around working on their problems helps create a research atmosphere that makes my own work easier.
>
> As my major interest is methodology and test development, the problems raised by others have provided opportunity to sharpen my own ideas and to contribute to those studies.
>
> Fruitful interaction with others.
>
> Helped by enlarging range of communication with scholars.

But not every kind of interaction with the staff guarantees intellectual rewards. If staff members are poorly prepared to execute research, then the director may have to assume the role of an intellectual nursemaid. Thus, one director who said that the job had hindered his research explained as follows:

> I spend so much time assisting others who are ill prepared in experimental design and statistical analyses that I don't have time for my own work.

And another replied:

> Time is taken up designing studies and writing proposals for others.

In short, poor qualifications of the staff may be largely responsible for the feeling of some directors that their interactions tend to be exploitative rather than rewarding. In addition to sharing an area of interest with the staff, then, a second factor influencing the opportunity to reap the intellectual fruits of their job is the quality of the staff.

A third factor is the size of the research organization. As shown in Table 5.4, directors of small units are as likely to feel helped as hindered, while directors of larger units are more likely to feel hindered. The relationship is not a linear one, however, for it seems to be the medium size unit which presents the greatest difficulty to the director. The explanation might well be that the largest units have administrative assistants who absorb routine managerial duties so that the director has more time to continue his research.

TABLE 5.4

Contribution of Directorship to Own Research, According to Size of the Unit

Have duties associated with directorship hindered or helped own research?	Staff Size of Unit*		
	1 - 5	6 - 10	11 or more
Helped	35%	21%	29%
Hindered	35	72	52
No effect	29	7	19
	99%	100%	100%
No. of directors:	(17)	(14)	(21)

*Includes both staff members and facilitated faculty members.

The importance of some type of administrative assistance can be seen in Table 5.5. Directors who have executive secretaries, associate directors, or administrative officers more often say that the position has helped rather than hindered their research. One director mentioned that he was looking forward to the time when an administrative assistant would make it possible for him to recommence his own studies:

> Administrative duties have hindered conduct of my research; however, we are seeking a full-time Administrative Officer of the Center. If we can secure an Administrative Officer, my continuing as Co-Director will not hinder and may even help the conduct of my own research.

The relationship between the presence of an administrative assistant and feeling helped in research is not as large as one would expect, however. Even directors with administrative assistants tend to say that the position has hindered rather than helped them carry out their research (44 per cent and 41 per cent, respectively).

TABLE 5.5

Contribution of Directorship to Own Research, According to Presence of an Administrative Assistant

Have duties associated with directorship hindered or helped own research?	Unit has an Administrative Assistant	
	Yes	No
Helped	41%	30%
Hindered	44	50
No effect	15	20
	100%	100%
No. of directors:	(27)	(20)

One difficulty may lie in a tendency for administrative officers to get into research work themselves and to neglect administrative duties. Since the value climate of a research organization confers prestige on the members for their _scholarly_ activity, associate directors for administration may be apprehensive about becoming second class citizens unless they are able to participate in the intellectual life of the unit. For example, all four of the associate directors for administration whom we interviewed in as many Research and Development Centers pointedly assured us of their intentions to carry out their own research activities. When we specifically inquired of one of these administrative officers whether he ever felt like a "second class citizen in a community of scholars," he replied that his own research project had protected him from this stereotype. The prospect, of course, had occurred to him. Thus, social pressures in the unit may sometimes defeat the purpose for which an administrative officer is appointed, namely, to relieve the intellectual leader of the unit from routine administrative affairs. On the whole, however, administrative assistants do seem to make a difference in affording the director an opportunity to continue his research.

Our discussion of factors which affect the director's opportunity to benefit from the position clearly demonstrates that directing a research organization is not _inherently_ antithetical to one's scholarly pursuits. Nor does the degree of "hindrance" seem very serious, for _the great majority of those who complained that the duties of the directorship hindered their research were nevertheless doing research_. Seventy-nine per cent of the directors who made this complaint were engaged in research at the time of our survey. (_All_ of the directors who said the position had helped their research were conducting studies, however.) Further, as mentioned at the outset, our data suggest that the opportunities for intellectual intercourse with colleagues in the unit exceed the requirements of administrative functions. This fact, together with the potential help to one's own research, make it possible for the managerial scholar to enjoy unusual intellectual benefits as a consequence of his unique position.

C. Styles of Leadership

The most cursory observation of directors of research organizations indicates that considerable variation occurs in the way in which the job is performed. Some directors are actively involved in the work of their staff -- conducting seminars, assisting in the analysis of materials, consulting on the design of studies, and so forth; while others tend to remain outside the intellectual arena, confining their attention to facilitating the staff in whatever directions they choose. Other directors are recognizable by their taste for dealing with the world outside of the unit, including funding agencies, the university administration, clients, and so on. Still another dimension which seems to differentiate directors is their time-perspective. Some look ahead to the future and try to draw up long-range plans for the organization, while others seem to concentrate on more short-run developments, such as the completion of particular projects. No doubt there are other ways to distinguish the leadership patterns of managerial scholars, but these examples are sufficient to suggest that a range of types needs to be developed.

It is the purpose of the present section to explore the feasibility of classifying directors of research organizations according to definite leadership styles. Since our efforts here are mainly exploratory, the typology of leadership introduced in this section is based on the responses of the directors to only a single question:

> Under which of the following circumstances, if any, have you ever intervened in an on-going study?

The percentage of directors who checked each of seven categories listed in the question are shown in Table 5.6. We have grouped the circumstances according to "administrative" and "intellectual" types of intervention.

TABLE 5.6

Circumstances Under Which Unit Directors Have Intervened in Projects

Under which of the following circumstances, if any, have you ever intervened in an ongoing study?	% Unit Directors
Administrative interventions	
A project was having personnel problems	61%
A study was failing to meet its deadline	28
A sponsor or client was worried about the progress of a study	23
A project was having budgetary problems	23
Intellectual interventions	
You passed on information which seemed valuable to a study	61
An investigator was having difficulty analysing his data	28
Practically never intervened, regardless of circumstances	26
Total number responding:	(61)

On the whole, it appears that the directors are just about as likely to intervene intellectually as administratively, which once again reflects the two-fold obligation of directors to maintain both the operational and the intellectual aspects of the unit. The large proportion who have intervened in personnel problems probably reflects the importance of the director's recruitment role, referred to earlier. The fact that many more directors have passed on information than have intervened in the analysis of data is indicative of compliance with the norm of scientific independence, for the passing of information is obviously the more passive role. Of particular interest is the sizable minority (26 per cent) who stated that they had "practically never intervened, regardless of circumstances." Thus, a number of research directors stand entirely apart from the work of their staff.

The question concerning the circumstances of intervention permitted the respondents to check as many of the circumstances as they wished. Thus, we are able to score the directors according to the number of circumstances in which they have intervened "administratively" and the number in which they have intervened "intellectually." A respondent, for example, who had intervened in all four of the administrative circumstances (personnel, deadline, client, and budget problems) would receive a score of four on the scale of administrative intervention. Likewise, one who had intervened in both of the "intellectual" circumstances (passing information and analyzing data) would receive a score of two on the scale of intellectual intervention. By classifying the respondents on both scales simultaneously, we can derive a tentative typology of leadership styles. The number of individuals who fall into each category created by the intersection of

TABLE 5.7

A Typology of Leadership Styles*

Number of Circumstances: Administrative Intervention	Number of Circumstances: Intellectual Intervention 0	 1	 2
0	EXTERNAL LEADER (25%) (15)	INTELLECTUAL (33%) (4)	(6)
1	(4)	(5)	(5)
2	(2)	(3)	(3)
3	EXECUTIVE (25%) (1)	(4)	INTENSIVE LEADER (18%) (7)
4	(0)	(1)	(1)

*The numbers in parentheses are the numbers of directors falling into each of the fifteen logical categories; while the percentage figure is the per cent falling into each of the labelled combination of categories (leadership styles).

the two scales is shown in Table 5.7. By combining certain categories, we have derived four styles of leadership which are labelled in the table as follows: the External Leader, the Executive, the Intellectual, and the Intensive Leader. (The percentages in parentheses following each of these labels in Table 5.7 indicates the per cent of directors of each type.) The ways in which administrative and intellectual involvement are combined to produce the four leadership styles should be self-evident from our labels: the "intensive leader" is both administratively and intellectually committed; the "intellectual" is mainly concerned with scholarly matters; and the "executive" is mainly an administrator. The "external leader" is so labelled because his aloofness from the affairs of staff members is associated with an outer-direction of energies. The external orientation of directors who have "practically never intervened" in the work of project directors, either administratively or intellectually, is shown clearly in Table 5.8.

In this table we have set forth the activities which were found to be most characteristic of each of the four types of directors. These activities were identified by examining the proportion of managerial scholars of each type who said that they spent most of their time on the activity. If a particular activity was most frequently mentioned by one type of director, the activity was classified as "most characteristic" of that type. For example, the percentage of directors who said that they spent most of their time on "assisting staff members with analytical problems which arise in their research" were as follows: Executives, 21 per cent; External Leaders, 29 per cent; Intellectuals, 30 per cent; Intensive Leaders, 45 per cent.

TABLE 5.8

The Roles Most Characteristic of Four Styles of Leadership*

The External Leader

Negotiating with or reporting to funding agencies.

Encouraging individuals associated with your unit to undertake research which is of immediate help to schools.

Directing or facilitating service studies for schools in the area.

Communicating the needs of the unit's research program to the administration.

The Executive

Budgeting for the unit as a whole.

Collecting and disseminating information about financing of research.

Formulating the goals of the unit's research program.

Gaining the assistance of scholars in other departments in the university in planning or executing research.

Encouraging individuals associated with your unit to undertake research which is of general interest to scholars in education.

Communicating the needs of the unit's research program to the administration.

The Intellectual

Assisting staff members in writing proposals.

Judging the adequacy of research proposals written by individuals associated with your group.

Providing facilities (other than funds) for researchers.

The Intensive Leader

Assisting staff members with analytical problems which arise in their research.

Facilitating communications among researchers associated with your unit.

Judging the adequacy of research proposals written by individuals associated with your unit.

Collecting and disseminating information about financing of research.

*The responses in this table are based on the following question:

> Among those activities which you have checked above, which do you devote most time to? (Please list no more than three activities by writing the appropriate letters below.)

Hence, the activity was regarded as "most characteristic" of Intensive Leaders. (In the case of a tie within 5 percentage points between two types of directors, the activity was classified under both types. The percentage of directors of each type who checked each of the activities as among their most time consuming activities is shown in Appendix C, Table 5.)

The non-intervener (External Leader in Table 5.8) is the type of managerial scholar who spends most of his time negotiating or reporting to funding agencies, helping school systems, and communicating with the administration of the university. In short, his focus is definitely external to the unit. For example, 21 per cent of the External Leaders said that their dealings with funding agencies absorbed most of their time, compared with 7 per cent of the Executives, 5 per cent of the Intellectuals, and none of the Intensive Leaders. Apparently the activities of External Leaders have paid off handsomely, for they have enjoyed a much higher approval rate for proposals submitted by their units, and the research budget of their units has increased very markedly in the recent past. Table 5.8a shows the proportion of proposals submitted under each type of director in the past fiscal year which were approved, and the proportion of units whose research budget increased by at least 40 per cent in the past three years. It is quite obvious that the External Leaders have been far more successful in gaining support for proposals and thereby raising the budget. This observation tends to validate our characterization of the non-intervener as an External Leader who lines up resources for the unit by dealing with the outside world.

The activities listed as being most characteristic of the other leadership styles also validate our typological derivations. The Executive is mainly concerned with such managerial problems as budgeting, formulating goals, staffing, and dealing with the administration. He is also concerned, however, with urging staff members to undertake scholarly studies. This is probably due to the fact that the Executives tend to be trained outside of education and to be located in the "better research" schools, a point that we shall return to later.

TABLE 5.8a

Approval Rates of Proposals and Budget Increases Associated with Four Styles of Leadership

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
% of proposals approved:*	88%	64%	63%	57%
Total submitted:	(96)	(45)	(63)	(74)
% units whose budget increased by 40% or more in past 3 years:**	67%	38%	38%	28%
No. of units represented:	(9)	(8)	(13)	(7)

*The question was: "About how many research proposals were originated by professional persons associated with your unit during the past fiscal year; and how many of these proposals were successful in obtaining financial support?"

**The question was: "What do you expect to be your total budget (or gross revenues) this year, and what was it three years ago?" Units which were founded within the past three years were eliminated from the base numbers.

The Intellectuals spend most of their time on only two intellectual functions, i.e., assisting staff members in writing proposals and judging the adequacy of proposals. Thus, a most interesting fact emerges -- the Intellectuals confine their scholarly involvement to the planning of research. They do not distinguish themselves as being deeply involved in research which is on-going, such as in assisting project directors with analytical problems or in facilitating scientific communications among the staff. Before offering an explanation for the tendency of Intellectuals to confine themselves to the pre-research stage, we need to contrast the Intellectual with the Intensive Leader.

The Intensive Leader makes his main intellectual contribution when research is already underway, although he also frequently judges the adequacy of research proposals. But unlike the Intellectual, he assists the staff in the analysis of research materials, and participates in the network of communication among staff members. These results show that the Intensive Leader is much more actively involved in the intellectual life of the unit than the Intellectual himself.

This result by no means invalidates the typology, but rather confirms the main points of our analysis. When we look at the research productivity of the four types of directors, we find that the Intellectuals are currently doing more of their own research and have been much more productive as scholars. In a very real sense, then, they are "intellectuals." It thereby becomes clear that they are either too busy with their own research or too sensitive to the conventional scientific norm of independent work to inject themselves into the research of their staff. The Intensive Leader, on the other hand, has a strong interest in scholarly matters, and, in addition, is highly qualified for managerial roles. The statistical evidence for these sharp distinctions between the Intensive Leader and the Intellectual is shown in Table 5.9

TABLE 5.9

Research Activities and Backgrounds Associated with Four Leadership Styles

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
Research Productivity (research articles and monographs per year of life)	.30	.30	.59	.24
	(13)	(11)	(18)	(11)*
Longest period done research as a primary activity				
Two years or more	46%	53%	58%	36%
	(13)	(15)	(19)	(11)
Currently doing research	86%	86%	100%	82%
	(14)	(14)	(20)	(11)
Last position held				
Administration	31%	31%	31%	50%
Teaching	69	69	65	50
Research	8	15	25	--
	(13)	(13)	(20)	(10)

*Numbers in parentheses are the bases of percentages, i.e., the number of directors of each type. Bases vary due to variations in response to different items.

First, we see that the Intellectual is more than twice as productive as the Intensive Leader, who is the least productive of the four types. Further, the Intensive Leader has spent the least amount of time doing research as a primary activity, while the Intellectual has spent the most amount of time. Also, we see that all of the Intellectuals are carrying out their own research, compared with 82 per cent of the Intensive Leaders. Finally, it is quite evident that the Intensive Leaders more often come from administrative backgrounds. In sum, the greater amount of administrative experience which characterizes the Intensive Leader equips him for a more active role in the intellectual life of the unit than the director who is chiefly a research worker.

But it is not only a matter of the Intensive Leader being better qualified for the manifold roles of a director of research; it may also be a matter of the Intellectual being peculiarly disqualified. In the first place, the Intellectual seems to have adopted the norm of scientific independence to a greater degree as a consequence of his own deep involvement in the scientific culture. For instance, the Intellectuals most often prefer to work alone rather than in a research team, as revealed by their replies to the following question:

> Do you personally prefer to work with other researchers, or do you prefer to work on your own?

As shown in Table 5.10, 30 per cent of the Intellectuals prefer to do individual research, compared with 21 per cent of the External Leaders, 21 per cent of the Executives, and only 9 per cent of the Intensive Leaders. (The latter far exceed the other groups in their preference for team research.) Thus, precisely because Intellectuals are active researchers, they perhaps respect the intellectual autonomy of staff members more than the Intensive Leaders who have been less exposed to the individualistic tradition of scientific research. This consideration may partly explain why the Intellectuals tend to confine their leadership to the planning of research rather than also helping in its execution. In addition, they are carrying out their own research, which takes time away from the leadership of the unit. Thus the Intellectual may be somewhat disqualified for playing the range of intellectual leadership roles available to the director of a research organization. When we turn to administrative matters, we see further evidence of the Intellectual's lesser qualifications.

TABLE 5.10

Preference for Individual or Team Research Associated with Four Leadership Styles

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
Prefer to work with others, or alone?				
With others	50%	43%	45%	73%
Alone	21	21	30	9
Don't care	29	36	25	18
	100%	100%	100%	100%
No. of directors:	(14)	(14)	(20)	(11)

According to the replies to two questions concerning administrative prowess, the Intellectuals seem to be least successful while the Intensive Leaders and Executives seem to be most successful. The two questions were the following:

(1) How much freedom do you have personally to determine the research program of your unit?

___ A great deal of freedom
___ A moderate amount of freedom
___ Only a little freedom
___ Almost no freedom

(2) Research units in some universities receive unqualified support from the administration, while in others certain problems arise. Have you experienced any difficulties in gaining support for your plans from the administration of the graduate school or department of education in the past three years? If so, please briefly describe the problems. (Your remarks will be treated confidentially.)

The replies of each type of leader to these questions are presented in Table 5.11.

TABLE 5.11

The Amount of Freedom to Determine the Research Program and Support from the Administration Associated with Four Leadership Styles

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
Amount of freedom to determine program				
A great deal	77% (13)	87% (15)	70% (20)	91% (11)*
Has support from the administration (i.e., did not mention any difficulty)	67% (12)	80% (15)	44% (16)	82% (11)

*The numbers in parentheses are the bases of percentages, i.e., the number of directors of each type.

In reply to both of these questions, which may be taken as rough measures of administrative success, the Intensive Leader shares with the Executive a higher order of achievement than either the External Leader or the Intellectual. In particular, the Intellectual has had the *least* success of the four groups in these administrative realms. These results strongly suggest that sheer scholarship is not sufficient for the successful operation of research units. They also indicate that the Intensive Leader is at least as successful in securing the support of the school administration and in governing the research program as the pure managerial type, or as we have called him here, the *Executive*.

We are also able to compare the different types of directors on a more global measure of the unit's success, although due caution must be taken in interpreting their replies to this highly subjective question. The question was as follows:

> Although it is difficult to measure objectively the success of an organization whose products are intellectual, usually the participants have a pretty good idea of how well the organization is doing. How successful do you personally feel your unit has been (1) *in terms of the goals* to which the unit aspires, and (2) *in comparison* with other research units in schools of education around the country which you know about?

	In terms of unit's goals	In comparison with others
Highly successful	____	____
Somewhat successful	____	____
Somewhat unsuccessful	____	____
Very unsuccessful	____	____

In Table 5.12 we show the proportion of directors of each type who claimed that their unit had been "highly successful" in both absolute and comparative terms. In comparison with other units, once again the Intensive Leaders and the Executives are similar in most frequently stating that the unit has been "highly successful."

One might explain the poor showing of Intellectuals on this question in terms of the higher level of aspiration of directors who have done a good deal of research themselves -- but for the fact that it is the Intensive Leader who seems to have the higher level of aspiration. Thus, when the directors reported success in achieving the unit's goals (i.e., in absolute terms rather than in comparative terms), the Intensive Leaders are least often pleased. Twenty-seven per cent of the latter said that the unit had been "highly successful" in achieving its goals, compared with 36 per cent of the External Leaders, 37 per cent of the Intellectuals, and 47 per cent of the Executives. In short, the Intensive Leader has apparently set himself higher goals, but nevertheless tends to feel that his goals have been fairly well achieved. This is a pattern of response which is not shared by any of the other types of managerial scholars.

The accumulated weight of the results presented thus far suggests that the Intensive Leader has had considerable success as a managerial scholar, despite his relatively poor showing as a researcher, and perhaps even because of it. A more positive explanation for the Intensive Leader's apparent success lies in his greater commitment to the organization. For example, when we compute the mean number of

TABLE 5.12

Absolute and Comparative Success of the Unit
Associated with Four Leadership Styles
(According to the Directors)

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
% saying the unit has been "highly successful"				
In comparison with other units	27%	43%	32%	45%
	(11)	(14)	(19)	(11)*
In terms of the unit's goals	36%	47%	37%	27%
	(14)	(15)	(19)	(11)

*Numbers in parentheses are the bases of percentages, i.e., the number of directors of each type. Bases vary in some categories because of non-response variation.

activities which were checked by directors in each of the four groups, we find that the *Intensive Leaders* perform 16.3 activities. This compares with 14.5 activities for the *Executives*, 13.6 for the *Intellectuals* and 13.6 for the *External Leaders*. Furthermore, Intensive Leaders seem to be deriving greater benefits from their position than the other directors. Table 5.13 shows the proportion of directors of each type who stated that their duties hindered, helped, or had no effect on their own research. Quite obviously, the Intensive Leaders feel that they are gaining more from their position of leadership than the other types of directors. Almost two-thirds said that the duties associated with the directorship had *helped* their own research. No doubt this is related to the fact that they have not done much research in the past. It any event, it appears that these leaders are exerting greater effort in their capacity as research director, both for the advantage of the organization and for their own scholarly development.

That the type of director who exerts both managerial and intellectual leadership is more committed to the organization can be shown in still another way. As mentioned earlier, organizational leaders can also be identified according to their time perspectives. The research director who charts the long-term development of his organization is clearly different from the director who worries mainly about day to day operations. While we have not dealt with this dimension as a separate leadership style, it is instructive to relate the presence of a developmental perspective to the styles which we have already delineated.

Two questions were asked of the respondents which permit us to draw some conclusions about their developmental perspectives. These questions, which have already been referred to in a previous chapter, were the following:

> (1) Please describe any changes in the research program of your unit which are planned for the future.
>
> (2) If your unit were to receive about $200,000 for facilitating or conducting educational studies, or for preparing researchers, how would you like to see these funds used?

By simply counting the number of plans which were mentioned in response to each of these questions, we can see if one type of leader is more developmentally oriented than another. The mean number of plans mentioned by each of the four groups is set forth in Table 5.14. With reference to both questions, the Intensive Leaders have more plans for the future than other types of managerial scholars. Thus, it seems that

TABLE 5.13

Contribution of Directorship to Own Research, According to Four Styles of Leadership

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
Have duties associated with directorship hindered or helped own research?				
Helped	23%	36%	25%	64%
Hindered	54	50	55	36
No effect	23	14	20	--
	100%	100%	100%	100%
No. of directors:	(13)	(14)	(20)	(11)

TABLE 5.14

Mean Number of Plans for Future, With and Without Money, Associated with Four Styles of Leadership

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
Mean no. of plans (without more funds)	1.12	1.12	1.15	1.75
No. of directors:	(8)	(8)	(13)	(8)*
Mean no. of plans (with $200,000)	1.63	1.43	1.64	1.80
No. of directors:	(10)	(7)	(14)	(10)*

*The base numbers of the means exclude respondents who did not answer the question.

a developmental perspective is also associated with a style of leadership which combines both managerial and intellectual concerns.

The most striking feature concerning the content of plans expressed by the different types of directors is that Intellectuals tend to think in terms of specific substantive and methodological ideas, while other leaders respond in terms of organizational plans. This point can be best demonstrated by comparing a few examples of the responses of Intellectuals with those of other types. The following selected plans were expressed in response to the question concerning future plans (irrespective of additional funds):

Intellectuals

> Greater emphasis on the economic and sociological aspects of education, with particular attention to some current problems such as cultural deprivation, urbanization, and economic dislocations.
>
> Research on pre-schools for the disadvantaged.
>
> . . . Need research in college teaching. So far most research has been on elementary and secondary students.
>
> . . . The methods of psychological and sociological research are necessary but not sufficient for developing an efficient educational research enterprise in this country. Until the hardware of computers, the software of symbolic logic, operations research, simulation, and operational gaming become available there could not be substantial inquiry in education. . . .
>
> Increase in validation of occupational and academic criteria of differential abilities a la Guilford.

External Leaders

> We are attaching to the Bureau a trained research man who will be advisor to entire College of Education staff on research problems -- will teach courses in research methods also -- will assist faculty in planning projects, etc.
>
> Expansion of personnel.

Graduate assistants; statistical lab; more personnel in unit (add 1).

Since we are field service oriented, research directions will come only on the initiative of the individual staff members if they are so inclined.

Executives

Slow growth of present stance.

We are seeking a new Director of our Research Section, and except for necessary institutional research, we are marking time.

We hope to expand our interchanges with academic departments and public schools in order to develop a coordinated research effort in the laboratory at ____________.

Intensive Leaders

Broaden base to include more applications for grants from outside sources.

Will probably merge with the Department of Educational Sociology and Research . . . subsumed under a school director who will bypass all department chairmen.

Increase commitment of faculty and funds to research activity. Assigned time to faculty research as part of load.

We intend to merge with a much larger (multi-mullion) Research and Development Center.

Broadening the scope of inquiry in the field of reading and possibly into other areas.

Contrasting the responses of Intellectuals with those of other managerial scholars, it is plain that the Intellectuals are much more oriented to substantive and methodological issues, while the other types pay greater attention to organizational plans.[2]

---

[2] In a further attempt to validate our measure of "intellectuality" we took into consideration the alleged tendency of intellectuals to deal with symbols rather than with things. Thus, we counted the number of words which the directors used to describe what they would do with $200,000. The average number of words per plan for each type of leader was as follows: External Leaders, 5.8; Executives, 8.2; Intellectuals, 14.1; and Intensive Leaders, 15.9. In short, the two types who intervene in intellectual matters (the Intellectuals and the Intensive Leaders) are more verbose than the other directors.

D. Sources of Leadership Styles

Thus far we have not systematically considered the organizational and personal factors which contribute to the emergence of one or another style of leadership. Much more work needs to be done on this aspect of leadership, and we plan later on to extend the present discussion by examining historical materials contained in the questionnaires. Meanwhile, our observations are confined to a few statistical tendencies associated with the four styles of leadership. As we shall see, however, these statistics contain important clues about the sources of leadership styles.

First, the Intensive Leaders are most often located in research units which already existed, that is, they have inherited rather than founded their units. The percentage of leaders of each type who inherited their units are as follows: Intensive Leaders, 91 per cent; Executives, 79 per cent; External Leaders, 75 per cent; and Intellectuals, 68 per cent. In short, a director may be able to assume the style of an Intensive Leader because the unit has a better established tradition and greater security as an organization. (We saw earlier, for example, that Intensive Leaders have good relationships with the administration.) Other reasons why the style of the Intensive Leader emerges have already been referred to, namely, a weaker commitment tothe norm of independent scientific work by virtue of limited participation in the scientific culture, and greater administrative experience.

Since we have already discussed the background of the Intellectual leader, here we need only to sum up our earlier comments. We have seen that Intellectual directors are more scholarly in their orientation -- they have done, and are presently doing more research. Their involvement in the traditional research culture in education has probably given them a high respect for independent scholarship, which prevents them from participating more actively in the research of their staff. And their own research work may simply leave them with less time for leadership. The Intellectuals probably reached a point in their scholarly careers where they realized that their own research interests could best be served by establishing or joining a research facility. (As shown above, the Intellectuals rank highest in frequency of having founded their own unit. Thirty-two per cent of the Intellectuals founded their units compared with only 9 per cent of the Intensive Leaders.) Hence, they are eager to become directors of units, but exercise relatively little intellectual control over the work of their staff. Nor can it be argued that their staff is of higher quality and therefore less needful of intellectual guidance. In the first place, the Intellectuals spend a great deal of time helping the staff prepare proposals; and in the second place, the research quality of the schools in which they are located, and the research orientation of the unit itself, do not suggest that the staff is outstanding. This is a point which needs to be taken up in our discussion of the conditions which give rise to the Executive style of leadership.

It is the Executive whose staff very likely has greatest competency for research. As shown in Table 5.15, the Executive's unit tends to be located in the "best research" schools and to be most highly research-oriented. Since the Executive leader himself is not an outstanding research producer, it may well be that the competence of his staff makes it possible for him to focus on the managerial aspects of his position without having to worry about the staff's intellectual achievements. Whether the Executive is hired to fulfill this role or whether the organization constrains him to assume the role cannot be answered at present.

TABLE 5.15

Quality of School's Research and Orientation of the Unit Associated with Four Styles of Leadership

	Leadership Styles			
	External Leader	Executive	Intellectual	Intensive Leader
% of units in schools named as doing the "best research."	43% (14)	60% (15)	40% (20)	45% (11)
Orientation of unit is "research" (more than half of the budget devoted to research):	56% (9)	79% (14)	65% (17)	60% (10)

The External Leader is the most difficult of the four types to account for. On most of the dimensions which we have examined, he falls in the middle rather than at the extremes. For example, he is neither the most nor the least productive as a researcher; and neither the most nor least successful as an administrator. His preference for team work and his involvement in founding the unit are also in the middle range. Further, his career profile is very similar to that of other types, at least with respect to his last position before becoming a director and his having worked in school systems.

Although one might think that the External Leader arises in a situation where the organization is insecure in its relations with the environment, we are unable to find evidence of this condition. As a matter of fact, the External Leaders report least difficulty in recruiting individuals for the unit; and as mentioned earlier, two-thirds deny having any difficulty in gaining support from the administration. Further, they do not direct the youngest organizations. Both the Executive's and the Intellectual's units are younger.

There is one background characteristic, however, which sharply distinguishes the External Leader from other types of directors -- the External Leader is more often a professional educator. Rarely has he received graduate training outside of education, and rarely does he wish to be known and respected outside of educational circles. These facts can be seen in Table 5.16. Only 14 per cent of the External Leaders received most of their graduate training outside of a department or school of education, and only 8 per cent wish to be known and respected outside of education. Interestingly enough, their professional

TABLE 5.16

Type of Graduate Training and Reference Groups Associated with Four Styles of Leadership

	Leadership Styles			
Where received most of their graduate training	External Leader	Executive	Intellectual	Intensive Leader
% outside of a school or dept. of education	14% (14)	40% (15)	30% (20)	27% (11)
Reference groups* (where wants to be known and respected)				
In the universities				
Outside education	8%	43%	28%	26%
In education	75	36	39	38
In school systems	17	21	43	38
	(12)	(14)	(18)	(8)

*The typology of reference groups is based on responses to the following questions:

(1) There are several groups whose opinions are important to educational researchers. In the long run, would you rather be known and respected:

___ Throughout the institution where you work.
___ Among scholars in your field in different institutions.
___ Among teachers or administrators in school systems.

(2) Some scholars in education seek mainly to achieve recognition from behavioral scientists outside the profession, while others are primarily concerned with being recognized by other scholars in the profession. Please check the group whose judgment is more important to you personally.

___ Scholars outside of education.
___ Scholars in education.

(The typology of Reference Groups was derived from combinations of the responses to these two questions. Orientation to the local institution or to different institutions was disregarded. Further, those directors who expressed a desire to be known and respected "among teachers or administrators in school systems" were set aside as a separate category, i.e., were not classified according to whether they sought recognition from "scholars outside of education" or "scholars in education.")

orientation does not extend to school practitioners nearly as much as to the university setting. As a matter of fact, they are least likely to regard school practitioners as comprising a normative reference group. (The fact that the Executive most often hails from non-educational fields and is most highly oriented to these fields is probably a correlate of his being located in the "best research" schools, which institutions have more interdisciplinary ties.)

Perhaps the External Leader is simply more integrated into the profession of education than the other leaders, and consequently feels more at home outside of the unit than the other leaders do. He more often received his training in a school of education; and in view of his desire to be recognized among professional colleagues, it is probably safe to say that he has built up a wider network of social relationships in schools of education than the other leaders. In short, his extensive involvement in professional education in the university may distract him from exercising greater leadership over the internal affairs of the research organization. But he does bring home the bacon, as shown by his success in obtaining research support. He may well be a professional leader who uses the research unit as a "home base" for his operations.

* * * * *

Our discussion of the leadership styles of managerial scholars should not be considered the last word on the subject. In the first place, the typology which we have employed was based on the responses to only a single question. Undoubtedly our leadership types could be considerably refined by a more elaborate framework, perhaps using some form of cluster analysis. In the second place, the small number of cases representing each style of leadership renders multi-variate analysis impossible as a means of checking our interpretations. Essentially, our discussion has attempted to demonstrate the range of styles which are available to managerial scholars, and to explore the feasibility of developing clear-cut categories of research leaders through the use of questionnaires.

The evidence which we have been able to marshal strongly suggests that there are indeed a variety of distinct leadership patterns. In part, these patterns are a response to the nature of the organization. For example, the Executive enjoys a more qualified research staff than other directors and can therefore afford to stay out of intellectual affairs -- as a matter of fact, the staff may oppose his intervention in intellectual matters. In other cases, a leadership style may emerge from the director's background. Thus, the External Leader is more deeply imbedded in the profession of education as a consequence of his training, and the Intellectual is prone to respect the autonomy of his staff as a consequence of his own scholarly career and to serve primarily as a "design consultant."

In still other cases, no doubt it is a *combination* of personal background and organizational circumstances which produce a particular leadership style. Thus, the Intensive Leader comes out of an administrative rather than a research background, which prompts him (1) to assume managerial roles without being overly concerned about the intellectual autonomy of the staff, and (2) to seek help from the unit in undertaking his own research. (Quite possibly his past administrative position caused him to postpone his own research until he became director of the unit.) In addition, the quality of his staff is probably not outstanding, which supplies a motive for injecting himself into their research work. Also, since he has more often *inherited* the organization, he is relieved from the necessity of trying to achieve a secure footing within the university, thereby affording greater freedom to assume leadership *within the organization*.

It goes without saying that in light of the limitations of our data, these notions are pretty inferential; but they demonstrate how organizational and personal characteristics might interact to produce varying styles of leadership.

Now that we have gained some idea of the possible styles of managerial scholars, we need to examine two controversial issues which have arisen in recent years. One issue concerns the relative advantages of faculty research coordinators and bureau directors as alternative modes of administering research. The second issue concerns the stereotype of the bureau director as an "empire builder." In connection with the latter issue, we shall describe the kinds of *formal authority* which the directors possess.

E. Faculty Research Coordinators versus Bureau Directors

In the preceding chapter we noted that recent pressures for increased research by faculty members in education and easier access to federal funds have raised some doubt about the advisability of supporting research through organizations. An alternative arrangement which is sometimes proposed is the appointment of a research coordinator for the entire faculty. In Chapter II we reported the activities of research coordinators. We also compared schools with coordinators and schools with bureaus on our reputational measure of "research quality"; and suggested that coordinators are best suited for stimulating research rather than for monitoring research, and providing the necessary resources and intellectual climate.

Since coordinators are sometimes set against unit directors as a better means of facilitating investigations, we shall now resume our discussion of the comparative advantages of coordinators and research units with particular reference to the functions performed by the two types of managerial scholars. Table 5.17 presents the proportion of coordinators and of unit directors who checked each of a variety of roles in response to the question:

> From the following list of activities, please check those for which you are solely or chiefly responsible, adding any other activities which are relevant.

We have grouped the activities according to four types: intellectual activities, administrative activities, communication, and stimulation or planning of research. Since both the directors and the coordinators are administrators of research, by comparing the frequency with which they perform the same roles we are able to isolate the role requirements and opportunities involved in managing an organization as contrasted with managing a loose aggregation of individual rrsearchers. Within each of the four categories, therefore, we have rank-ordered the roles according to the percentage differences between the proportion of unit directors and of coordinators who perform each of them.

It is obvious that unit directors are much more active than research coordinators. The mean proportion of unit directors performing each of the fifteen activities is 70 per cent, compared with 50 per cent of the coordinators. This difference is largely a reflection of the amount of time which the two types of managerial scholars devote to the job. When we asked, "Approximately what proportion of your total university work is spent on all these activities taken together?", we found that the unit directors spend an average of 63 per cent of their time on the job while the coordinators spend an average of 48 per cent of their time. Thus, if span of activities and investment of time are symptomatic of job commitment, it appears that the unit directors are considerably more committed.

It could be argued that concern for the sheer survival of the research organization accounts for the differential commitment of the two types of research administrators. The implication of such an argument is that "administrative" duties usurp the time of unit directors. We have already seen, however, that the unit directors more often engage in "intellectual" interchanges than in "administrative" duties. Moreover, when we compare the specific activities of coordinators and of unit directors (Table 5.17), we find that the unit directors exceed the coordinators in the performance of "intellectual" roles almost as much as in the performance of "administrative" roles.

TABLE 5.17

Activities of Directors of Research Units and of Faculty Research Coordinators

	Unit Directors	Coordinators	% diff.
Intellectual Activities			
Formulating the goals of a research program.	84%	32%	+52
Providing opportunities for students to participate in research.	83	55	+28
Assisting members with analytical problems which arise in their research.	74	48	+26
Judging the adequacy of research proposals written by individuals associated with your unit (Coor: written by faculty).	78	58	+20
Administrative Activities			
Seeking funds for researchers.	81	39	+42
Encouraging researchers in the university who are not associated with your unit to become associated in some way. (Coor: Securing new staff members to do research.)	64	26	+38
Providing facilities (other than funds) for researchers.	70	39	+31
Allocating outside funds for research.	31	3	+ 28
Gaining the assistance of scholars in other departments in the university in planning or executing research.	70	45	+25
Communication			
Communicating the needs of the research program to the administration.	84	68	+16
Facilitating communications among researchers.	69	71	- 2
Collecting and disseminating information about financing of research.	53	58	- 5
Stimulation			
Encouraging members to undertake research which is of immediate help to schools.	69	52	+17
Assisting faculty members in writing proposals.	72	81	- 9
Encouraging members to undertake research which is of general interest to scholars in education.	61	74	-13
Number of respondents:	(64)	(31)	

As a matter of fact, the activity in which unit directors most often exceed the coordinators is the vital function of "formulating the goals of a research program." Eighty-four per cent of the unit directors mentioned this activity compared with only 32 per cent of the coordinators. (This finding also underscores the opportunity to develop an intellectual tradition of studies in bureaus.)

It is not surprising that the second largest difference between coordinators and unit directors pertains to the provision of continued financial support for staff members (81 per cent of the unit directors compared with 39 per cent of the coordinators). This marked difference is explained by the fact that directors of research units are committed to maintaining a staff. In the absence of support for long-term programs of research rather than for discrete projects, this responsibility can make excessive demands on the time of unit directors.

Recruitment, provision of facilities, and allocation of funds are other "administrative" roles which are much more often performed by unit directors. Training of students, assistance of researchers with analytical problems, and judging proposals are other "intellectual" roles performed considerably more often by directors. In short, it is certainly not true that concern for the sheer survival of the research organization renders unit directors less able than coordinators to become involved in scholarly questions. Direction of a research organization requires the maintenance of an intellectual climate as well as the provision of administrative assistance.

There are two kinds of responsibilities which are shared about equally by unit directors and coordinators: giving information to researchers, and stimulating research. As a matter of fact, coordinators are more often engaged in initiating scholarly research and informing faculty members about sources of support. (The unit director, by contrast, more often seeks funds for researchers.) In sum, coordinators tend to be instigators, while unit directors more often play supportive and supervisory roles.[3]

These observations touch upon another controversial issue. If the unit directors are more involved in the work of their staff, does this mean that staff members in research organizations lose some measure of intellectual autonomy? As we saw in Chapter III, fear of loss of autonomy is frequently cited as a reason that researchers remain outside of any existing research organization. We have a way of testing the accuracy of this notion. If it is true that staff members in bureaus are somehow restricted in their work as a consequence of the director's supervision, then we should find that unit directors more often intervene in intellectual affairs than coordinators do. Table 5.18 shows the responses of the directors and coordinators to a question which we have already mentioned:

> Under which of the following circumstances, if any, have you ever intervened in an on-going study?

It will also be recalled that we provided the option: "Practically never intervened, regardless of circumstances." It is true that the unit directors have more often intervened than the coordinators: 74 per cent of the unit directors have intervened at one time or another, compared with 61 per cent of the coordinators. But the greater intervention of unit directors is wholly confined to administrative matters.

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[3] That directors more often encourage research which is of "immediate help to the schools" reflects the service orientation of many bureaus of educational research.

This can be seen in Table 5.18. (In particular, the directors have been far more active in handling personnel problems, which reminds us of the serious problems which unit directors face in recruiting or holding staff members.) The results, then, do not bear out the common fear that entry into a research organization entails restrictions on intellectual freedom as a result of the director's supervisory role. Apparently, unit directors are restrained from exercising greater authority over the work of their staff by the pervasive norm of scientific independence.

TABLE 5.18

Circumstances under which Unit Directors and Coordinators of Faculty Research Have Intervened in Projects

Under which of the following circumstances, if any, have you ever intervened in an on-going study?	% Unit Directors	% Coordinators	% Diff.
Administrative Interventions			
A project was having personnel problems.	61%	21%	+40
A study was failing to meet its deadline.	28	14	+14
A sponsor or client was worried about the progress of a study.	23	11	+12
A project was having budgetary problems.	23	25	- 2
Intellectual Interventions			
You passed on information which seemed valuable to a study.	61	57	+ 4
An investigator was having difficulty analyzing his data.	28	32	- 4
Practically never intervened, regardless of circumstances	26	39	
Total responding:	(61)	(28)	

We saw earlier, however, that directors more often "assist" project directors with their analytical problems. The discrepancy between the two sets of results shows that the intellectual role of the directors is supportive rather than dominating. Table 5.18a makes the point quite clearly by comparing the two sets of results. Here we note that 74 per cent of the directors assist staff members with analytical problems which arise in their research, compared with 48 per cent of the coordinators. But when it becomes a matter of intervening, the directors have slightly less often intervened on analytical problems. In short, the unit directors make themselves more available for consultation than do the coordinators, but are less prone to intervene in projects when it is not a matter of administrative necessity.

TABLE 5.18a

The Proportion of Unit Directors and of Coordinators Who Assist with Analytical Problems, and Who Intervene in Analytical Problems

	% Unit Directors	% Coordinators
Current activity (Assisting staff members with analytical problems which arise.)	74% (64)	48% (31)
Circumstance under which has intervened (An investigator was having difficulty analyzing his data).	28% (61)	32% (28)

To summarize, the more active participation of unit directors in almost all spheres of leadership while also recognizing the intellectual independence of the staff commends this type of managerial scholar as generally superior to the research coordinator, at least as a means of carrying out research.

F. Formal Authority and the Stereotype of the "Empire Builder"

The leadership of complex organizations requires that more than personal influence be exercised over the activities of subordinates. The concept of formal authority denotes two things: a set of rules and regulations governing the occasions when the exercise of influence is legitimate, and some means of sanctioning subordinates for compliance with or violation of expectations. In organizations which perform routine operations, the exercise of formal authority by administrators is natural and acceptable. But in organizations which are devoted to intellectual innovations, formal authority becomes highly problematic. In research organizations, for example, staff members are scientists who expect to have a large measure of freedom in determining their own activities. And when research units are a part of a larger institution which highly prizes intellectual autonomy (i.e., academic freedom in the universities), the individual who gains control over his peers through a position of formal leadership is often viewed with considerable suspicion. Thus, suspicions about the motives of managerial scholars in the university setting are summed up by the pejorative stereotype of the "empire builder." In fact, the prevalence of this stereotype may be one reason that scholars are not anxious to fill positions of formal leadership in the universities.

The hypothesis of the "empire builder" is essentially a psychological proposition, for it refers to a motivation to seek power for its own ends. If we find, therefore, that the amount of formal authority which unit directors possess varies according to strictly organizational characteristics, then we shall have refuted the hypothesis. Another means of testing the theory is to see if individuals who created their own organizations have more power than individuals who inherited their organizations. Presumably, if a "power motive" is operating, it should be most clearly manifested among those individuals who have exerted the greatest effort to gain power. Before testing these notions with our data, we need to describe our measure of formal authority. Also, the kinds of formal authority possessed by directors of research units is of some interest in its own right.

Several questions asked of the directors were intended to measure their formal authority. In addition, we asked the directors to say how much "freedom" they personally have to determine the research program of their units. By relating their subjective assessments of "freedom" to various measures of formal authority, we are able to gain some idea of the kinds of authority which promote the directors' freedom of action. Table 5.19 shows the distribution of directors according to various kinds of formal authority. On the right hand side of the table, we present the proportion who reported a "great deal of freedom" according to degrees of formal authority.

The authority of directors is most often exercised in arriving at the decision to undertake a study and in seeing to the successful completion of projects. It is least often exercised in the determination of promotions and salaries of the researchers associated with the unit.

Although we reasoned that being accountable to the university president rather than to the dean indicated that the director had greater power in the institution, this is the only measure of authority which is not positively associated with the director's subjective assessment of his freedom. As shown in the right-hand column of Table 5.19, the greater the formal authority of other kinds allotted to the director, the greater the likelihood of his claiming that he has a "great deal of freedom" in determining the program of the unit. Thus, it may be wrong to regard a director who reports directly to the president as being more influential in his own sphere.

Most highly related to freedom of action are (1) the director's exclusion from membership on a directorial or advisory board, and

TABLE 5.19

(I) The Formal Authority of Directors of Research Units, and (II) Their Freedom to Determine the Research Program According to Degrees of Authority

	% Directors	% Who Claim "Great Deal of Freedom" in Determining Program
1. As director of a research unit, to what administrative officer are you directly responsible?		
Top university administrator (President, Chancellor, etc.)	16%	67% (9)*
School of education administrator	84 (62)*	86% (50)
2. Does your unit have a directing or advisory board . . . ? (Who are the members?)		
Does not have a board	50%	83% (30)
Has a board, and director is a member	33	85% (20)
Has a board, but director is not a member	17 (64)	55% (11)
3. In most cases, which of the following participate in the decision about whether or not to undertake a study?		
Director participates	86%	81% (52)
Director does not participate	14 (63)	67% (9)
4. What individual(s) or group(s) determines research promotions and salaries of the researchers associated with your unit?		
Director only	7%	100% (3)
Director and other	33	90% (20)
Not director	60 (60)	71% (35)
5. Who is considered by the administration to be responsible for the successful completion of most research projects carried out in your unit?		
Director with study directors	67%	85% (41)
Not Unit Director	33 (64)	70% (20)

*Numbers in parentheses are the number of respondents on which the percentages are based.

(2) his authority to determine promotions and salaries. The relationship between the latter type of authority and feeling free to determine the program is particularly interesting in view of the fact that most directors do not have this authority. Further, when we consider that most are held partially responsible for the successful completion of studies, it becomes evident that many directors of research units are held responsible for the work of individuals over whom they have little formal sanctioning power. As a matter of fact, four out of ten directors are held responsible for the successful completion of projects but do not have the authority either to increase salaries or to promote their staff.

Now let us see if the degree of formal authority which managerial scholars have is related to the kind of organization which they direct. If so, then we shall have cast serious doubt upon the notion of the director as an "empire builder" who seeks power for personal ends.

In order to reduce formal authority to a single dimension, we have constructed an Index of Formal Authority with scores ranging from 0 to 8. The Index measures the amount of authority indicated by the director's participation on an advisory board of the unit, in determining salaries and promotions, in deciding whether to undertake a study, and in being held partially responsible for the successful completion of research projects in the unit. (For details of how these items were scored, see Appendix G.) Using the Index of Formal Authority, we find that the power of managerial scholars is related to three important organizational features: the type of activity prevailing in the unit; the size of the unit; and the number of persons who have *preceded* the director. Table 5.20 presents the mean "authority scores" of directors according to each of these organizational properties.

The first thing that Table 5.20 tells us is that *directors of service-oriented units have more formal authority than directors of research-oriented units*. The relationship between authority and service orientation may be explained by the fact that service work is more *routinized* than research. Thus, the staff members of a service unit require less freedom to risk different approaches to their work, and the director can legitimate his authority by reference to a standard body of knowledge and techniques. Research is a more uncertain affair. Whereas service work is routinized, research is essentially innovative. Hence, scientists are jealous of their freedom to explore alternative strategies and to take considerable risks on occasion. Periodic failure or set-backs are bound to result from this type of innovative work; and it is probably for this reason that scientists often insist upon being left alone to pursue their uncertain course. In short, a *research* climate might hamper the accumulation of authority in the hands of an administrator.

When we turn to the *size* of the organization, we find a very curious result: *the larger the organization, the less the formal authority of the director* (also shown in Table 5.20). This finding contradicts a common assumption among students of formal organizations that larger organizations require more coordinative management, and hence, greater centralization of authority. The reason for the negative relationship between size and formal authority might be that *research units are part of a larger organization*, i.e., the school of education or the

TABLE 5.20

Mean Authority Scores of Directors According to the Unit's Type of Activity, Size, and Age

		Mean Authority Scores
Type of activity (Research Orientation, as measured by % budget for research)		
	High (90-100%)	4.00 (17)
	Med. (50-89%)	5.00 (16)
	Low (0-49%)	5.50 (18)
Size of the unit (total professionals associated, i.e., staff and facilitated faculty)		
	Large (11+)	4.33 (21)
	Med. (6-10)	4.46 (13)
	Small (1-5)	5.00 (20)
Number of predecessors		
	None	4.42 (24)
	One	4.50 (16)
	Two to four	4.67 (15)
	Five or more	6.25 (4)

university. This means that larger units entail greater investment on the part of the parent organization. As a consequence, the leaders of these larger units may be more circumscribed by the university in their freedom to manage the unit.

The third observation to be made in Table 5.20 is that directors who have had more predecessors occupying their position tend to have greater formal authority. This result is in conformity with past studies of formal organizations which have suggested that succession promotes bureaucratization. One theory holds that the successor finds himself outside of the informal structure of communication by virtue of his strangeness to the organization. Thus, it is necessary for the new leader to introduce formal means of communication and supervision in order to establish control.[4] Another theory suggests that a successor is under the scrutiny of his own superior for a certain period of time until he proves his capabilities in running the organization. The pressure of the "trial period" may constrain the new leader to introduce certain organizational innovations in order to prove himself to his superior. In the process of innovating, the new leader may enlarge the sphere of authority which he inherited. Still another theory maintains that the very fact of succession means that the predecessor was not fulfilling his job as well as he might. If the organization has suffered under the predecessor, it is incumbent upon the successor to enhance the organization's effectiveness. It is also understandable how this type of situation would promote the enlargement of the successor's sphere of authority. Finally, at least one study has shown that administrators who are brought from outside the organization are more innovative than those who are promoted from within the organization.[5]

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[4] Alvin W. Gouldner, Patterns of Democracy, Glencoe: Free Press, 1954.

[5] Richard O. Carlson, Executive Succession and Organizational Change. Chicago: Midwest Administration Center, 1962.

The "insider" has been submerged for some time in both the formal and informal network of the organization. Greater commitment to the prevailing operations and social structure of the organization is a natural consequence of long tenure; and we might even say that the insider is more committed to the traditions of the organization than other staff members, since commitment of this kind is often a prerequisite for promotion. Because the directors of the research units in our study were almost invariably brought from outside the organization, the number of previous directors may be related to the amount of innovative leadership which the unit has experienced. And in the process of innovating, the new leader may acquire more formal authority than his predecessor.

But whatever the explanation, it is apparent from these various findings that the amount of formal authority possessed by directors is a function of the kind of organization which they direct, rather than the consequence of some pervasive "power motive."

As mentioned earlier, there is a second means of testing the "empire builder" theory. If the theory were valid, we would expect that directors who were instrumental in setting up their own research units would tend to have greater formal authority over the operations of the unit. In other words, the motivation to gain power, if it exists, should be displayed most clearly by those who have gone to the greatest lengths to gain power. When we classify the directors according to whether they founded or inherited their units, however, we discover that the founders of their own units have less formal authority than the inheritors.[6] The fourteen directors who themselves proposed or implemented the unit have a mean authority score of 4.43, while the inheritors have a mean authority score of 5.11.

But if directors who established their own organizations are apparently unmotivated by a thirst for power, what does set them apart from other directors? The answer is surprisingly simple -- they are much more actively committed to research. Directors who founded their own organizations are 257 per cent more productive than directors who inherited their organizations. This conclusion is based on the following question:

> About how many research articles or monographs have you published since obtaining your highest degree?

In order to control for the age of the directors, we computed a ratio of publications to years of age for each respondent. The productivity rate of the thirteen directors who founded their units (and who supplied the number of publications) is .77, while the comparable figure for those who inherited their units is .30. The implication of this finding for the motivation of scholars who establish research organizations is obvious -- they are seeking to create organizational arrangements which permit them to carry out their strong research inclinations. This finding, incidentally, is also eloquent testimony to the need of the universities for organized research facilities, since it is the most productive researchers who create these organizations.

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[6] Two questions were used to determine whether the director was instrumental in setting up his organization: "What person, group, or agency originally proposed that the unit be founded?", and "What person, group, or agency was primarily responsible for actually implementing the idea?" If the director mentioned himself in reply to either of these questions, he was regarded as a founder of the unit.

G. Summary and Conclusions

Few positions in the university are more challenging than the direction of a research organization. The director must combine a wide variety of skills, including administrative prowess, research competence, human relations and public relations know-how, and teaching and consulting skills. In view of the unusual combination of skills and aptitudes which is required, it is not surprising that managerial scholars are in short supply in the universities (and also, we might add, in such governmental agencies as the Bureau of Research, U.S.O.E., where many positions are as yet unfilled due to the paucity of candidates with similar qualifications). And as if it were not hard enough to find people who are able to combine the right talents and experiences, there is also a certain stigma attached to withdrawing from the lab or the classroom to assume a position of formal leadership. The administration, for their part, do not take initiative in the management of scholarly affairs because of prohibitions on intervening in the faculty's sphere of influence. Hence, our universities are poorly organized for intellectual work; while purely administrative matters such as "student accounting" are highly centralized and streamlined.

Research organizations do not run under their own power. Without a director who can exercise leadership in many areas, the organization tends to become stultified. This conclusion is based on our experience with social research institutes as well as on the findings of the current study. In particular, our survey of bureau directors shows their vital importance. They are most often the main influence in setting the current goals of the organization (much more so than university administrators), they have introduced major innovations, and their succession has deeply affected the work and current status of individual units. These observations apply with special force to research-oriented units, possibly because the provision of services to school systems is a much more routinzed activity. In effect, service-oriented units are better able to operate under their own steam.

As for the stigma attached to becoming a managerial scholar, it is simply not true that directors of research organizations spend all or even a major portion of their time on routine administration. For example, they are more likely to spend time helping their staff in the analysis of data than in seeking funds for researchers, or in providing facilities, or in budgeting for the unit. Thus, one of their major sources of gratification is the opportunity for intellectual exchange with staff members. And those directors who have a competent staff working in their own specialty are even helped in carrying out their own research, in addition to managing the unit. (If a director has an administrative assistant, he is further relieved from routine administration in order to do his own work.)

But perhaps the most telling indication of the director's ability to retain and even broaden his scholarly perspective is the fact that the great majority of directors are presently conducting research; and the most productive among them founded their own organizations. Clearly, the duties of a director are not only compatible with research activities, but under the right conditions can contribute to their own scholarship.

As a consequence of organizational variability, on the one hand, and the difficulty of combining in one person all of the skills associated with managing a research unit, on the other, managerial scholars tend to fall into certain types. The range of leadership styles represented by the directors in our study demonstrates that the management of a research unit is by no means a cut and dried proposition. Some directors are able and eager to expand the unit by seeking funds and building up public relations (the External Leader). Others are more concerned with providing for the administrative needs of the unit on a day to day basis (the Executive); while still others are preoccupied with sustaining the intellectual climate of the unit. Within this latter group we need to distinguish between the highly productive research experts who tend to confine themselves to the planning of research (the Intellectual); and the director who is not a productive scholar but who is deeply involved in all phases of the unit's work, and to whom the organization is a very important part of his professional life (the Intensive Leader). Possible sources of these different styles of leadership were also discussed. We are well aware, however, that more thorough analysis of our data and additional studies are needed to pin down the determinants of these patterns of leadership, and also to explore alternative patterns.

Turning to two controversial questions, we investigated the comparative contributions of faculty research coordinators and directors of research organizations, and then sought to test the stereotype of the "empire builder." On the first issue, we found that unit directors more often perform supportive and supervisory roles, while coordinators are more often concerned with stimulating research. Since we saw in an earlier chapter that coordinators are usually located in schools of education which do not emphasize research production, while research-oriented bureaus are more characteristic of the "better research" schools, it might be appropriate to view coordinators as harbingers of research units. In other words, the faculty's lack of competence and their resistance to research work must first be overcome before the advantages of working in a research organization can be fully exploited in a given institution. The "quality control" function of bureau directors can only be carried out where production of research is already underway. (This is not to say that unit directors do not also frequently try to "stimulate" research of a certain kind in their units. They simply pay much less attention to this role than coordinators.)

It should be noted, however, that despite the greater effort which unit directors devote to sustaining a certain intellectual climate they do not "intervene" in the staff's scholarly activities any more than the coordinators. The norm of scientific independence is not violated inside of research units any more than it is outside of these units. Hence, the faculty's fear of loss of autonomy as a result of the director's authority, referred to in an earlier chapter, seems to be much exaggerated. By and large, it is the organization of research within the unit which is the object of the director's initiative. Recruitment, promotion of teamwork, fund raising, and insuring that deadlines are met are examples of areas in which the directors take most initiative. On the intellectual front, however, they are mainly supportive.

Another controversial issue that often arises when one discusses the leadership of research organizations is the question of the "empire builder." Using our measure of formal authority, based on several items which are related to the director's own sense of autonomy, we found that organizational characteristics determine the amount of power which directors have at their disposal. Also, we found that directors who had founded their units have less formal authority than those who have inherited their units. Since it is the highly productive researcher who more often establishes his own organization, we are led to the conclusion that the chief motive for the founding of research bureaus is to increase one's opportunities for serious scholarship. In short, university research organizations grow out of the needs of researchers, and the managerial scholar is their prophet.

CHAPTER VI

RELATIONS BETWEEN SERVICE AND RESEARCH

The provision of professional services to practitioners is a matter of increasing concern to the educational community. Despite the fact that schools and departments of education have been committed to serving the needs of practitioners for many decades, there has been continual demand for an expansion of services. It is true that recently such terms as "development," "research utilization," "dissemination," and "demonstration" have replaced the older terms of "field services," "consultation," and "school survey," but the expectations of practitioners which call forth these varied activities and the social structure of the schools have not altered; and thus far the new set of R & D concepts have not been essentially different in practice from traditional types of services. This observation requires further comment.

Professors of education have been "developing" educational practices for decades. That their work has not grown out of research evidence has been due to the inadequacies of research, rather than to any mistaken notion of the proper mode for the invention of educational practices. For the profession does not so much lack a proper respect for research results as it lacks appropriate results. Scepticism about the existence of valuable research findings which are simply awaiting implementation is widespread among deans and research administrators. We asked the respondents whether they agreed or disagreed with the following statement:

> We already know so much about the teaching-learning process that the main problem facing us is how better to disseminate this knowledge so that it is used in the schools.

The great majority of deans, of coordinators, and of directors of research units deny that the main problem is implementation rather than production of research. (Nine out of ten deans and coordinators and seven out of ten unit directors disagreed with the statement.)

No doubt the new R & D concepts will enhance the prestige of research-based practices, but in the absence of significant research work, these concepts will only become new labels -- yesterday's textbook writing and expert consultation will become today's "development" and "dissemination." To sum up, a resurgence of interest in developmental and disseminative activities within the profession which is not accompanied by new and improved research simply means a continuation of the types of services which have been supplied to schools for many years.

So far we have not witnessed a breakthrough in applied educational research; hence, we shall use the term "service" in this chapter to cover all forms of proferred expertise and of social bookkeeping for school practitioners, including the new R & D nomenclature. Further, it is possible that the new R & D framework, which presumes a base of research evidence, will not be translated into action as long as research and developmental activities are carried out within traditional contexts or by the same personnel. It is this contention which we try to document in the present chapter by exploring the effect of service activities on conceptions of the nature of research, on recruitment of research manpower, and on the conduct of research programs within bureaus.

But before turning to the evidence of our study, we need to explore the problem in the perspective of inter-institutional relationships between professional education departments and school systems. In the section immediately following, we explore several sources of the extremely close relationships between these institutions, with an occasional comparative reference to other professions. (Much more theoretical and empirical work needs to be done on relationships between practitioners and professional schools in various professions. Our remarks on this subject should therefore be regarded as impressionistic rather than confirmed by extensive investigation.)

A. Sources and Consequences of Close Relations Between Professional Departments and School Practitioners

Professional departments are distinguished from the basic disciplines by their obligation to serve the needs of a specific occupational group. These needs are not always restricted to the recruitment, socialization, and training of future practitioners, but sometimes include the maintenance of quality, efficiency, and institutional adaptability on the part of current practitioners. The extent to which the latter functions of professional schools are carried out seems to be influenced by: (1) ideological and (2) patronage ties between practitioners and their training agencies, (3) the monopoly of professional skills and knowledge which these schools possess, (4) the desire of professors to participate in practice, and (5) the need of practitioners to legitimize professional authority. In order to understand the character of the close relationship between educational practitioners and schools of education in the United States, we shall briefly examine each of these dimensions in turn.

Ideological ties originate in the socialization of student practitioners. One of the crucial functions of professional training is indoctrination with certain occupational values. The student-physician must learn to approach the human body with neither repulsion nor desire and the student-lawyer must learn to approach ethical and moral issues with uncommon equanimity. The ideal of placing service to the client above personal comfort, and the proscription against exploiting the professional-client relationship for one's own ends are other values with which professionals-to-be must be ingrained. No doubt, school teachers are socialized to some extent in the values of restraint, permissiveness, and respect for human potentialities in their dealings with the immature members of our society. In short, the training of professionals is as much a matter of value transformation as it is of learning skills and acquiring knowledge. The significance of this process of professionalization for continued relationships between practitioners and professional schools is that the practitioner is bound more closely to his trainers as a consequence. In effect, he incorporates the outlook of his trainer into his own professional make-up, and thereby comes to share with him an occupational value system. This phenomenon is by no means peculiar to the preparation of educational practitioners, however.

A second source of relationships between professional practitioners and the institutions where they receive their training is located in the job placement process, and could be considered a form of patronage. In the field of education, this process affects not only teachers but also students of administration who rely heavily upon the recommendations of professors in gaining important posts in the state. A natural consequence is that former professors who recommended the student for his position are called upon for consultative services or for recommendations of persons seeking school positions. And since school personnel are not highly mobile geographically, the graduate tends to remain in the neighborhood of the training institution. Thus, there is continued interchange between the trainer and the former trainee. This source of continuing relationships between practitioners and professors may be somewhat more characteristic of education.

The third source of close relationships between schools of education and practitioners -- the monopoly of professional skills and knowledge residing in the professional schools -- may be particularly characteristic of schools of education. It is true that the special skills of teachers have never been made clear. And in recent years, the monopoly on the content of education which professional schools have held for several decades has been seriously challenged by national curriculum development groups and by changes in accreditation regulations in some places. But whether or not there is agreement on the legitimacy of schools of education as the providers of learning in America, by and large this is precisely what they have become. Until the recent past, the faculties of liberal arts and sciences have studiously avoided direct involvement in the determination of public school curricula. In the meantime, there has developed in schools of education a set of doctrines and guidelines concerning the best ways to instruct the young. Possibly, even if professional education departments could not have depended upon the certification system to insure their control over the flow of personnel into the schools, they would still have developed a monopoly on the content of education by virtue of the lack of interest in public education shown by the basic disciplines. Thus, regardless of the consensus among scholars as to the best methods of teaching or the most worthwhile knowledge, schools of education have, largely by default, been the sole source of educational content and methods for several decades. Consequently, the educational practitioner can only turn to the training institution for ideas and material in a form which can be readily used in the schools.

The monopoly of knowledge held by departments of education is probably greater than that held by medical and law schools. A major portion of the practical content of medicine originates in drug firms which conduct their own medical research and development. The closest analog in education to the drug firm is the independent research agency, such as Educational Testing Service or American Institute of Research. But the contributions of these agencies compose a very small part of the totality of school practices. By contrast, a physician simply could not practice without the medications supplied by pharmaceutical companies. Similarly, in the legal profession, practitioners do not need to depend upon the law schools in order to keep abreast of legislation or of new legal opinion. The chief sources of new legal knowledge are legislative bodies, the courts, and federal, state and municipal administrative agencies.

A fourth source of close relations between departments of education and school systems is also peculiar to education when compared with either medicine or law. If the professor of education wishes to supplement his earnings by involving himself in educational practices, or merely wishes to keep in touch with school situations, *he must do so through the established agencies.* Children are not taught in schools of education (except in lab schools which are widely recognized as atypical). But professors of medicine and of law can carry on private practices without gaining access to the agencies which are used by practitioners at large. (The medical professor often shares hospital facilities with full-time practitioners, but such hospitals are usually operated by the medical school; and most medical practice is conducted outside of hospitals anyway. The professor of law may practice in a firm, but this is not absolutely necessary.) Further, a recent study indicates that the private practice of professors of medicine is sometimes regarded by local practitioners as unfair competition.[1] Thus, since local practitioners and medical professors are competing economically, their relationships are not only lessened by the professor's ability to pursue his own practice, but are sometimes fraught with antagonism.

Finally, there is the function performed by schools of education of *legitimizing the authority of practitioners* in periods of educational crises. This function reflects a feature of the social system of education which is unique when compared with other professions, namely, constant pressure from society to overhaul and streamline educational institutions. In fact, American education could almost be called one of our most serious and abiding "social problems." Because of the great significance of this feature of American education for the historical status of educational research, we need to devote much more space to this influence on relations between departments of education and school systems than we have devoted to factors already mentioned. In large part, the aforementioned sources of close relationships may be viewed as conditions which have enabled the departments to play a major role in trying to answer the critical needs of educators.

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[1] Patricia Kendall, "The Relationship between Medical Educators and Medical Practitioners," in *Medical Schools and Teaching Hospitals: Curriculum, Programming and Planning*, Annals of the New York Academy of Sciences, Vol. 128, Art. 2 (Sept. 1965); pp. 568-576.

B. The Effect on Research of Education's "Permanent Crisis"

The current crisis in education had its counterpart in the early decades of the century when the schools were flooded with children who would never advance beyond the secondary level. Accordingly, one historically minded sociologist has characterized the agonizing shift to college-preparatory programs in the secondary schools in the past decade as "the second transformation" of American education, the first transformation being the transition from elite education to terminal education in the late nineteenth and early twentieth centuries.[2] In addition to these periods of drastic overhauling, there have been crises centering on "efficiency" (teens and 'twenties), lack of financial resources and of social consciousness ('thirties), lack of facilities and teachers (late 'forties), lack of moral indoctrination (Korean War), and lack of equal opportunity ('sixties). In short, the American educational system has been subjected to severe pressure and criticism for many decades. Whence the source of educational crises?

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[2] Martin Trow, "The Second Transformation of American Secondary Education," (mimeo), prepared for publication in The International Journal of Comparative Sociology, special issue on education, edited by A. H. Halsey.

What might be called the "permanent crisis" of American education arises from education's peculiar vulnerability to social change, which in turn results from our view of education as a mainspring of social order. Because education is regarded as a major vehicle for achieving social readjustment, rapid social change is accompanied by demands for equally rapid adaptations in our educational system. Yet due to the size, complexity, and decentralized organization of the American system of education, the rate of adaptation is bound to be slower than the rate of social change. The gap that results may even be a whole generation. Accordingly, the educational system is almost continually under pressure to catch up with the times. It is this situation which prompts us to characterize American education as a chronic social problem.

One could pursue the issue further by examining the source of the peculiarly high valuation placed upon education in American society, but this is not the place for that discussion. It is intriguing that one historian has traced our faith in education to the earliest settlers who feared that their descendants would be absorbed by the wilderness lest they were thoroughly ingrained with the values and manners of civilization.[3] But the main purpose of raising this point in the present context is to suggest that our faith in education and the resultant "permanent crisis" has strongly affected relations between departments of education and school systems in a way which has direct bearing on the status of educational research.

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[3] Bernard Bailyn, Education in the Forming of American Society (University of No. Carolina Press, 1960).

The conditions of emergency under which education tends to operate place a heavy burden on expert solutions. And since the production of knowledge by the behavioral sciences has lagged far behind the needs of the educational system, expertise has taken the form of practical wisdom rather than research evidence. The content of this expertise has been dictated by the rapidly changing needs of education in response to social change rather than by fundamental questions. And even when research is undertaken, it is often tailored to the narrowly conceived needs of practitioners.

Many authorities have commented on the faddism which has characterized educational research topics. For example, studies of class size, drop outs, and achievement were characteristic of the earliest decades of the century when "efficiency" was a prime concern of a new and insecure profession in search of public support. In the 'thirties, when assumptions about the social order were severly shaken, questions about social science education came to the fore. (Also, as a result of the increasing popularity of progressive education among professionals, the evaluation of progressive practices was another major research activity in this period.) In more recent decades, we have witnessed rising concern with creativity and giftedness, education of the "culturally deprived," programmed instruction, and evaluation of the new science and mathematics curricula. By and large, these new topics of research have been responses to societal demand for greater efficiency in the production of scientific technical personnel. This demand, in turn, has been stimulated by international power struggles inherited from the postwar period and by fundamental changes in our occupational structure.[3a]

[3a] If the reader doubts that present day concerns are dictated by social emergencies rather than by enduring needs, we need only point out that researchers are not currently concerned with the education of artists, social activists, entertainers, service workers, parents, and a host of other statuses which every day make basic contributions to our civilization.

Pressing educational needs may even dictate the purpose of research, namely, to debunk or legitimize already existing practices. For example, the educational testing movement in America was originally concerned with demonstrating the backwardness of instruction in spelling, arithmetic, reading, and so forth, in order to provoke curriculum revision and attain "efficiency." This goal, incidentally, was part of the program of the national progressive movement at the turn of the century; its implementation was largely inspired by Taylorism as practiced in industry.[4] In this instance, the social function of research on the achievement of school children was to debunk existing curricula. In the 'twenties and 'thirties, however, when a body of educational doctrine was articulated and widely diffused, research was undertaken to evaluate recommended practices which had been widely implemented for many years. Numerous commissions, professional monographs, and well-publicized experimental schools were the main sources of these practices. Although research played a negligible role in the design of the progressive methods of instruction, it played a large role in legitimizing "packages" of methods. The Eight-Year-Study, for example, sponsored by the Progressive Education Association in the 'thirties, was originally conceived as an attempt to legitimize the progressive practices which were then strongly endorsed.

What was uppermost in the minds of the members of the Committee on College Entrance and Secondary Schools of the Progressive Education Association when it fostered the Eight-Year-Study is clear from the

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[4] Raymond E. Callahan, Education and the Cult of Efficiency (Chicago: University of Chicago Press, 1962).

Chairman's Report of 1931. Chairman Aikin, who later directed the Eight-Year-Study, led off his announcement of the project by quoting a recent editorial in The New Republic:

> The time has clearly come for a facing of the facts in regard to progressive education. If it is a mistake -- and we do not know any college dean who would dare to say that it is -- it should be abandoned in toto; if it is right, then arrangements should be made whereby the student from a progressive school will not be penalized because the first twelve years of his academic life were wisely spent. What was said of the nation is true of education; it cannot remain "half slave and half free."[4a]

The Committee's answer to this challenge, which was coming from many quarters, was the now famous Eight-Year-Study. Thus, in only a few decades, education research had shifted from a debunking to a legitimizing function as a consequence of the profession's success in elaborating a body of doctrine and having it widely implemented.

Even today, evaluative research may be undertaken to afford insurance against criticism of a particular practice. A large portion of the research conducted by school systems, especially in the cities, is aimed at proving the efficacy of new practices (or of old practices which have fallen under attack). Proof of this motivation for research is found in those instances where school systems have suppressed or distorted results which were not favorable to the recommended practice.[4b] In sum, research is often indistinguishable from a service for schools to insure against attack; or to achieve acclaim for the implementation of a successful new practice. Quite obviously, when effort is mainly devoted to legitimative research, more fundamental questions are ignored.

[4a] Wilford M. Aikin, "Report of the Committee on College Entrance and Secondary Schools," Progressive Education, Vol. 8, 1931, P. 318.

[4b] It would be injudicious to name school systems where this has occurred, but professional experience suggests that examples are plentiful.

Another consequence of the responsiveness of research to the emergencies which have developed in the educational system is that techniques which have been highly successful in giving quick answers to practical questions were not developed for purposes of more theoretical research. This has occurred because certain techniques have become identified with a strictly practical usage, so that further development for theoretical usage was not encouraged. A case in point is the questionnaire or sample survey. This technique has been used solely as a descriptive device for the sixty years of its life in educational research.[5] At one time, surveys of school facilities, administrative practices, staff characteristics, and so forth, were quite valuable in the absence of a reliable machinery for social bookkeeping in education. But despite the fact that this need was considerably reduced by the spread of city and state "research" departments, the sample survey is still used in much the same fashion as in the 'twenties, and this observation applies even to the rare instances when attitudes or opinions are studied. The educational research textbooks, for example, give only passing attention to the survey technique, and no reference is made to the advances which have occurred in the social sciences in the use of surveys since the 'thirties. Here are some illustrative comments from leading texts in educational research:

> Surveys are conducted to establish the nature of existing conditions. The survey method represents research at a primitive level. It builds a body of fact that is usually of only local significance. The facts thus collected may contribute to the solution of immediate problems, but rarely do they develop a

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[5] Cf. Martin Trow, "Education and Survey Research," (ditto), to be included in The Application of Survey Procedures to Research in the Social Sciences (forthcoming).

> body of knowledge that can be used in solving future problems. Thus the technique tends to be a one shot method.[6]
>
> Generally, in formulating the questions (in a questionnaire), only facts should be requested, not opinions. Opinions do not lend themselves readily to tabulation or generalization and are difficult to handle in a study.[7]
>
> A questionnaire is a form prepared and distributed to secure responses to certain questions; as a general rule, these questions are factual, intended to obtain information about conditions or practices of which the respondent is presumed to have knowledge. The questionnaire has been used increasingly, however, to inquire into the opinions and attitudes of a group.[8]

These are astoundingly outdated commentaries to survey researchers in the social sciences.

Another research technique which is rarely used in education is field methods. A primitive form of this technique is also associated with a type of investigation which seeks to provide solutions to immediate practical problems, namely, the "school survey." (This latter technique is not to be confused with the "questionnaire survey," although confusion often arises from the fact that "school surveys" sometimes use the questionnaire as a data-gathering tool.) Essentially, the school survey is a form of field research which is aimed at evaluation and solution of problems in particular school systems. It seems likely that partly because of the identification of field methods with this type of service activity, educational scholars do not regard field work as scientific research. The systematic development of field methods in educational research has therefore been hampered; and the developments which have taken place in this technique have occurred outside of schools of education, in spite of the enormous opportunities for field work in school systems.

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[6] R. M. W. Travers, An Introduction to Educational Research (New York: Macmillan, 1958), p. 231; cited in Trow, ibid.

[7] H. L. Smith and J. R. Smith, An Introduction to Research in Education (Bloomington, Indiana: Educational Publications, 1959), pp. 214-15; cited in Trow, op. cit.

[8] C. V. Good and D. E. Scates, Methods of Research, Educational, Psychological, Sociological (New York: Appleton-Century-Crofts, 1959), p. 606; cited in Trow, op. cit.

The permanent crisis of education has called forth a variety of services from professional schools. In the remaining portions of this chapter we shall examine the effects of an accumulation of service obligations on: (1) conceptions of the nature of research, (2) recruitment of manpower for research, and (3) the conduct of research programs within bureaus. In a final section, we shall examine the feasibility of shifting service obligations from the universities to state agencies.

C. The Effect of Service Involvement on Conceptions of Research

A necessary condition for the institutionalization of a science is a high order of agreement on the activities which distinguish the science from non-scientific pursuits. By "institutionalization" we simply mean widespread consensus on the rules of the game and on the legitimacy of a particular group's acting in conformance with those rules. Thus, if the "game" itself is ill defined, then it is unlikely that the "rules" (or standards) can be developed.[9] In short, the scientific must be somehow distinguishable from the non-scientific. In the field of education, however, it seems that the appeals of service work have become so dominant that the very definition of "educational research" has been blurred.

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[9] For a comprehensive treatment of the problems involved in the institutionalization of a science, see David E. Wilder, "The Reading Experts: A Case Study of the Failure to Institutionalize an Applied Science of Education," (Ph.D. dissertation, Columbia, 1966).

Anticipating this possibility in our study, we asked our respondents to check from a list of activities those which they considered "educational research." The question read as follows:

> Since the term "educational research" is used in a variety of ways, it is often difficult to know what a person means by it. To which of the following kinds of activity do you ordinarily apply the term "educational research?"

Four of the activities in the check list were highly service-oriented. The proportions of deans, faculty research coordinators, and directors of research units who applied the term "research" to each of these endeavors are shown in Table 6.1. More than half of the respondents consider "school status studies" as research, while sizable minorities regard "designing" and "school surveys" as research. More than a fifth of the unit directors apply the term educational research to "dissemination" activities. In general, the unit directors are most likely of the three groups to apply the term to each of the activities listed.

The fact that unit directors tend to be more liberal than deans and coordinators in their definition of "educational research" attests to the impact of involvement in service activities on conceptions of the nature of research. For many of the research units are heavily involved in providing the kinds of services to schools referred to in our check-list. In order to make this perfectly clear, we have classified the research units according to whether they are performing the activities alluded to in our list of definitions of educational research, and then observed the definitions of research held by the directors.

TABLE 6.1

Selected Activities Checked as "Educational Research" by Deans, Coordinators, and Unit Directors

Types of "educational research"	Deans	Coordinators	Unit Directors
Collecting statistics on school practices and educational outcomes, sometimes called "school status studies."	54%	52%	55%
Designing new curricula and methods of instruction.	33	32	50
Local school surveys (curriculum, financial, plant, etc.).	33	26	41
Disseminating new curricula, methods of instruction, or other school practices.	4	3	22
Number of respondents:	(73)	(31)	(64)

Table 6.1a shows that directors of research units which conduct school surveys much more often define research as "collecting statistics" and as "school surveys." Likewise, directors of units which help schools implement new programs much more often define research as "designing new practices" and as "disseminating new practices." Finally, directors of units which supply consultants, publish a journal or newsletter, or prepare bibliographies also much more often define research as "dissemination." In short, to paraphrase an old song, if research is not what we do, then what we do is research.

These results give striking indication of the effect of service preoccupations on conceptions of research, and imply that the standards governing scientific work are not widely understood in education -- or if understood not widely shared.

TABLE 6.1a

Proportion of Directors Who Apply the Term "Educational Research" to Selected Service Activities, According to Whether the Service is Performed by the Unit

Activities checked by directors as defining "educational research"	(% directors who checked each activity according to): "Services performed by the unit	
	School surveys	
	Yes	No
"Collecting statistics"	69%	49%
"School surveys"	77%	17%
Number of directors:	(26)	(35)
	Help schools implement new programs	
	Yes	No
"Designing new practices"	63%	35%
"Disseminating new practices"	40%	6%
Number of directors:	(30)	(31)
	Supply consultants to local schools	
	Yes	No
"Disseminating new practices"	30%	12%
Number of directors:	(37)	(24)
	Publish journal, bulletin, or newsletter	
	Yes	No
"Disseminating new practices"	33%	15%
Number of directors:	(27)	(34)
	Prepare bibliographies on educational topics	
	Yes	No
Disseminating new practices	47%	14%
Number of directors:	(17)	(44)

D. Competition for Research Manpower

The insatiable demand for services which characterizes education has been sharply condemned as a deterrent to scholarly work by Arthur I. Gates, a past president of the American Educational Research Association and a recent recipient of the AERA-Phi Delta Kappa Award for Distinguished Contributions to Educational Research. In an interesting autobiographical note, Gates observes:

> In my first interview with James E. Russell, the famous head of Teachers College, he dangled before me a carrot of a job, and gave me a little lecture on the difference between the academic and the professional mind. I, like Thorndike and others before me, had received only an academic training in the psychological laboratory. Dean Russell was right in believing that in early days the young academically trained psychologist, for example, should open his eyes to the practical problems of education. He could have been forgiven, moreover, for not foreseeing that the young scientist was going to be fighting for his very life-as-scientist against exactly the opposite influence -- the never-ceasing pressure to be practical, to solve the practical problem, to give students practical help, to tell teachers exactly what to do. This pressure, which comes in a flood from one's students, from teachers and administrators in the field, and eventually from the majority of the staff of the school of education itself, has, in my opinion, *determined more than any other one influence the history of science in education*. If the tide of science in education has been ebbing during the past three decades, it is due in large measure to this relentless pressure of the practical, which takes many forms, and which is an almost inevitable consequence of the fact that school teachers and administrators must act practically on myriads of problems every day.
>
> An outstanding achievement of Thorndike, and most of the other great men of his day, was their success in fighting off this pressure . . . (our italics).[10]

In our discussion of the close ties between professional departments and schools, and particularly with reference to educational crises, we offered several reasons why the competition between service and research tends to be resolved in favor of service work. Our study provides empirical evidence of the competing advantages of service work.

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[10] Arthur I. Gates, "Science or Sanity," *Phi Delta Kappan*, March, 1964, p. 297.

About a third of the schools of education support units which are solely devoted to the provision of services to school systems. In schools where these units existed, we asked the deans to estimate how desirous faculty members were of affiliation with these units. In schools where research units existed, we asked the same question with reference to these units. (If both types of units existed in the school, the dean was asked about the faculty's attitudes towards affiliation with each type.) Table 6.2 shows the replies of the deans. Although a large minority of the deans were unable to estimate the faculty's attitudes, those who responded to the question more often reported favorable attitudes of the faculty towards affiliation with field service units.

TABLE 6.2

Desire of Faculty Members to Become Associated with Field Service and with Research Bureaus
(according to deans and coordinators)

Attitude of most faculty members towards association with:	Field Service Bureau (% schools)	Research Bureau (% schools)
Eager to join	53%	38%
Indifferent	32	54
Resist association	16	8
	100%	100%
	(19)	(26)
No answer or don't know faculty's attitudes	27%	21%
Total schools with bureaus:	(26)	(33)

These results are confirmed by the directors of research units themselves. As shown in an earlier chapter on the organization of research units, directors of *service*-oriented units (i.e., units where more than half the budget is devoted to service) report less difficulty in recruiting staff members than do directors of *research*-oriented units. *None* of the directors of service-oriented units who make an effort to recruit staff members complained that they had a "great deal of difficulty" in gaining adherents, but *27 per cent* of the directors of research-oriented units expressed this complaint. Moreover, the directors of service-oriented units are less likely to exert any effort whatsoever to recruit faculty members, strongly suggesting that they have less need of inducing faculty members to participate in their activities. Nor can this preference on the part of the faculty be explained by their lack of *information* about the activities of research units as contrasted with service units. When we asked the deans to report the faculty's level of information about the two types of units, they reported *greater* awareness of the activities of research bureaus. In short, the faculty knows what it is getting into in affiliating with these units -- and they prefer to get into service. (When we turn to the histories of selected research units, we shall see further evidence of the competitive advantage of service work.)

It seems likely that the competition for manpower between service and research will continue and even increase in the future. In the first place, new funding programs of the federal government have emphasized research and "research-related" activities to about an equal extent. The new Research and Development Centers are expected to carry out service activities in addition to undertaking more or less basic research, and the new multi-million dollar regional laboratories are specially designed to give direct help to school systems. Also, new legislation has allotted substantial funds to State Departments of Education for developmental and disseminative activities.

In the second place, the deans of schools of education are desirous of expanding both the research and service staffs. Their policies on this point can be seen by comparing the mean number of researchers and service workers currently in the schools with the mean number desired. Table 6.3 sets forth these comparisons.[11] Here we see that the deans would like to almost double the number of researchers, while also increasing the number of field service workers by a third. If one can assume that the deans will try to actuate their desires, then it is evident that competition for manpower will continue in the future.

TABLE 6.3

Involvement of Faculty Outside Bureaus in Field Services
and in Research, and the Deans' Preferences
(in schools without coordinators)

Mean number of persons per school engaged in:	Currently	Desired
Research	10.8 (33)*	19.3 (31)
Field services	11.1 (35)	14.8 (27)

*Numbers in parentheses represent the number of deans who provided useable information in reply to the question.

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[11] Because the question regarding the preferred number of field service personnel was not asked of deans in schools with coordinators, Table 6.3 presents only the schools without coordinators with respect to both the number of researchers and of field workers. Since there are fewer faculty members in these schools than in schools with coordinators, the means would be larger if these latter schools were included in the tabulations.

Many of the administrators covered in our surveys appreciate the problem of conflicting demands between field service and research. This conclusion is suggested by their responses to a question addressed directly to the issue:

> It is sometimes claimed that the desire of school systems for field services draws personnel and resources away from educational research. Do you consider this a problem in your institution? If not, why not? If so, how do you think the problem could be alleviated?

As shown in Table 6.4, 37 per cent of the deans believe that competition between field service and research is a problem in their institutions.

TABLE 6.4

Existence of Competing Demands between Research and Field Service According to Deans, Coordinators, and Unit Directors

Are personnel in your institution (or unit) drawn away from research by field service work?	% Reporting that the Problem Exists	Number of Respondents
Yes:		
Deans	37%	(71)
Coordinators	18%	(27)
Unit Directors	25%	(59)

Coordinators and unit directors, however, are less likely than deans to report that difficulties arise (18 per cent and 25 per cent, respectively). Perhaps the latter groups are too close to the problem to see it in proper perspective.

Not surprisingly, the drain on research manpower is more often reported for public universities. In Table 6.5 we have classified the deans and bureau directors according to the university's type of control (coordinators are not shown because virtually all of them are located in public institutions). Deans and directors in public institutions are about twice as likely as their counterparts in private universities to report that service work detracts from research. Since we can be sure that service activities loom large in public institutions, these results lend credibility to the reports of the respondents regarding the existence of the problem.

TABLE 6.5

Existence of Competing Demands Between Research and Field Service in Public and Private Institutions, According to Deans and Unit Directors

Are personnel in your institution (or unit) drawn away from research by field service work?	Type of Control	
	Public	Private
% respondents of each type reporting that the problem exists:		
Deans	45%	24%
Number of deans:	(42)	(29)
Unit directors	34%	15%
Number of directors:	(35)	(13)

Those deans who acknowledged the service drain on research manpower mentioned various means of coping with it. Enlarging the faculty so that both functions could be carried out was the solution most commonly offered (59 per cent of the deans who reported the problem so responded). Some illustrative replies follow:

> The demand for field services is more immediate than that of research, so we yield to the demand. Since personnel is limited, research is put off in favor of field services. The problem can be alleviated when we can supply sufficient personnel to do both.
>
> It is a problem here largely because of a serious staff shortage. A major means of alleviating the situation at most institutions is the development of adequate staff resources.
>
> Very much a problem. The only viable resolution is a larger staff if, as I believe, all professors should be engaged in research and field service, as well as teaching.
>
> It is a problem. Only remedy: appropriated funds for more personnel so that total load can be carried, including service activities.

We were able to identify only three schools which, according to the deans, had deliberately sought to reduce field services in order to promote research.

In sum, sizable minorities of deans and of research administrators report that the demand for services reduces the supply of researchers, particularly in public institutions. Evidence that research-oriented units have greater difficulty than service-oriented units in attracting faculty members confirms the impressions of those deans, coordinators, and unit directors who believe that the problem exists.

E. Service and research within research units

It is probably more difficult to protect the integrity of the research functions from the encroachment of service activities within bureaus than among departments, since a certain measure of insulation is provided within the school by departmental boundaries.

For example, the division of school administration may be heavily involved in providing services while the department of educational psychology may be equally concerned with basic research. But research units are much smaller agencies than schools of education, and it may therefore be more difficult to keep the activities in proper balance. Problems which have arisen from attempts to wed research and service within bureaus, and some solutions which have been adopted, are the central topics of the present section.

About two-thirds of the research units in schools of education perform services for local school systems, and about a fourth conduct "service research" for the administration of the university. Thus, service activities are by no means a rare occurrence in these units. It should be emphasized, however, that services have markedly declined within research units over the past several decades. This trend is revealed by a comparison of five surveys conducted at intervals during the past forty years (see Appendix C, Table 6, for details). For example, while about 95 per cent of the bureaus studied by Chapman in 1927 conducted some form of testing service, only about 50 per cent did so in 1949, and today only 5 per cent of the units are so engaged. The same pattern can be seen for school surveys: 86 per cent in 1927; more than 67 per cent in 1936; 61 per cent in 1949, 46 per cent in 1948; and 43 per cent in 1965. Similarly, with test construction there was a decline from a frequency of 71 per cent (1927), to 50 per cent (1949), and then to 10 per cent (1965). Service research for the university administration and for the state department of education has also declined in roughly linear fashion over the years.

These figures do not mean that services are less often performed by schools of education (although testing has probably been taken over by the large, independent testing organizations), but only that the combination of service and research within these agencies is historically on the wane. Still, the majority of research units today provide services. Table 6.6 shows the frequency with which services of various kinds are performed by the units in our study.

A number of bureaus have relinquished their service activities to other units over the years, reflecting the uneasy marriage of research and service within small agencies. In some cases, the service wing has expanded and sought a more influential voice in the determination of the unit's program. Occasionally, this has eventuated in the separation of services as a means of maintaining the integrity of the research program. In other, less fortunate cases, research has been virtually driven out of existence. The following case histories of several bureaus which survived for about four decades illustrate the problems which have arisen in trying to combine service and research activities under the same roof.

> The Bureau of Educational Research, Minnesota, was founded in 1915 for the purpose of carrying out school surveys and testing, and then publishing the results for the benefit of local school systems. In addition, in 1924 the Bureau began cooperating with a Committee on Institutional Research which was responsible for studies of the university's operations; and in 1937 the Bureau and the Committee were combined under the same director. Thus, for several years the Bureau was engaged in service studies for both school systems and the university. In 1948 a separate bureau was established to conduct school surveys, and in 1950 another separate unit was set up for institutional studies. The creation of these new units made it possible for the Bureau

TABLE 6.6

Services Performed by Research Units in Schools of Education

Services performed for school systems	% Units
Help schools evaluate new programs	66%
Supply individual consultants to local schools	61
Help schools implement new programs	49
Supply speakers for local school conferences or workshops	48
Conduct school surveys at the request of local schools	43
Conduct service investigations for the state department	22
Train teachers	20
Develop tests for use of classroom teachers in the state or area	10
Sell or distribute tests to schools	3
Services performed for university groups	
Advise the education faculty on research problems	59
Advise faculty members outside of education on research	48
Conduct service investigations for university officials (not college of education)	31*
Conduct service investigations for college of education	23*
Conduct service investigations for faculty committees	14*
Construct examinations or other evaluative instruments to be used by members of the university or staff	13
Handle job placements for students	12
Service investigations for the state department of education	22*
Documentation services (recipients unknown)	
Maintain a reference library	46
Publish a journal, bulletin or newsletter	44
Prepare bibliographies on educational topics	28
Number of units:	(61)

*These items were listed in a separate question which was answered by 64 directors. Hence, the per cents are based on 64 instead of 61 cases.

to focus its energies on more basic types of research.[12]

The Bureau of Educational Research, University of Illinois, began operations in 1918 by canvassing the school administrators of the State for problems on which research was needed. It is not surprising that first consideration was given to the conduct of a testing service for the schools. In addition, the Bureau conducted school surveys, including curriculum, plant, and financial studies, and "child-accounting." In 1921, a new director (Monroe) was appointed who sought to shift attention from "research of the philosophical type." But throughout the 'thirties economy cuts in the University reduced the staff to one man -- the director -- and the Bureau was not reactivated until 1947. The new organizational form which the Bureau took at that time included field services as an important activity. According to the current director, "The main organizational goal was to integrate basic research and field services operationally on the proposition that both would be enriched) (from the questionnaire). At about the same time, the Bureau incorporated the High School Testing Bureau as a new unit on evaluation.

The hoped for coalescence of service and research proved to be impossible however, as a result of a conflict between the director and the head of field services over the question of the proper division of authority. In 1951-52 the staff members involved in field services were moved to a new Office of Field Services where they could expand operations more easily. The unit on evaluation continued to operate within the Bureau until 1963 when a Center for Research and Curriculum Evaluation was founded. This separation was also a consequence of the division's desire to expand and to exercise sole authority over its work. As the present director has pointed out in our questionnaire, "This action resulted in the final separation of service from basic research."[13]

The Bureau of Educational Research, University of North Carolina, was created in 1923. Chapman has described the beginnings of the Bureau as follows: (the bureau) began its work by making a survey of the educational achievements and mental ability of the high school and grammar school graduates in the State. It also engaged in test construction and in a survey of the county-school system in North Carolina.[14]

> During the 'thirties, increased pressure for school surveys occurred as a result of "centralization of State school systems and financial difficulties arising from the depression" (from the questionnaire). School surveys were conducted until recent years when increased staff in the State Department of Education made it possible to transfer this activity to a State agency. Some services are still rendered to school systems by this Bureau, however.

Two of the seven bureaus which have survived since the 'twenties were less successful in handling the problem of services.

> The Institute of Psychological Research, Teachers College, Columbia, was originally one of three divisions within the Institute of Educational Research. The Institute was originally called the Division of Educational Psychology; the other divisions were Field Studies and School Experimentation. Six years after the founding of the Institute, the Division of School Experimentation was abolished, so that the Institute was comprised only of the divisions of psychological research and of field studies for most of the remaining nineteen years of its existence. (Two other divisions operated for short periods during the nineteen years.) In 1946 the two divisions were reorganized as discrete bureaus. However, seven years before this separation, Edward Thorndike had retired from the directorship of the Division of Educational Psychology and was succeeded by Irving Lorge. Lorge had shifted the emphasis of the Institute towards a testing service for schools and for several divisions of the university. Since he was less successful than Thorndike in obtaining outside grants for research, testing services tended to fill the gap. Robert Thorndike, who succeeded Lorge as the Director upon the latter's death in 1961, has only recently been relieved of competing administrative duties, and hopes to re— vitalize the research program of the Institute in the near future (from the questionnaire.)

Another bureau which shifted radically in the direction of services, and which only recently was able to revive its research program, is the Bureau of Educational Research and Services, Ohio State University. The history of this organization is particularly instructive on the question of the conflict between research and field services. For this reason it deserves to be studied in some detail.

The Bureau of Educational Research and Service, Ohio State, was originally known as the "department of efficiency tests and surveys." B. R. Buckingham, who was brought from the Bureau at Illinois to head the new Bureau in 1921, felt that the Bureau's obligations to the furtherance of research should be limited to a reference function. Accordingly, he created a library and an editorial division. Buckingham also headed the survey division until 1927, when T. C. Holy assumed responsibility for surveys. In 1925 the Appointment Bureau of the University which was concerned with job placement for students and alumni, was moved to the Bureau of Educational Research. When Buckingham was succeeded by Charters in 1928, the Dean added three new divisions to the Bureau as a condition for Charter's assuming the post. These divisions were called: University Curriculum, Student Personnel, and Accomplishment Tests. In 1930 a 10-day conference on educational radio was held, and in 1935 a Radio Division was created within the Bureau. Ten years later the University Radio Station was assigned to the Bureau. In short, over the years there was a gradual accretion of service responsibilities to the university and to local school systems, and particularly in the 'thirties when school systems were trying to stretch their scant funds as far as possible. At the same time, research continued to thrive within the Bureau and the famous Eight-Year Study, undertaken from 1932 to 1940, stands as the most exceptional accomplishment of Charter's directorship.

The increased services did not displace research activities until Holy's appointment as Director when Charters retired in 1942. Holy, it will be recalled, had succeeded Buckingham as head of the division of school surveys fifteen years earlier. During Holy's directorship the Bureau shifted radically towards service and away from research. In the late 'forties a new Dean of Education wished to redress the imbalance, and therefore when Holy retired in 1951, Arthur W. Foshay was selected from outside the University to direct the Bureau. But Foshay was probably looked upon as "the Dean's man" by the Bureau staff. Further, the faculty in the Department of Education wished to use the Bureau as an instrument for their own service activities, which provided a source of extra income; thus, the faculty strongly reinforced the orientations of the Bureau staff. The major source of support for continuance of past arrangements was, of course, the school systems of the State, which eagerly sought the low-cost services of the Bureau. As a matter of fact, the "school plant" division was so beleaguered with requests for help from the schools that it was not unusual for a year to elapse between the first approach of the client and the commencement of work. For these reasons, Foshay was unable to revive the Bureau's tradition of empirical research.

When Forshay left the Bureau in 1957 he was succeeded by H. W. Nisonger as Acting Director. Nisonger had formerly headed the Bureau of Special Education and the Bureau of Adult Education, both of which were devoted to teaching rather than research. In 1958, a Division of Educational Research was created by the Dean in an attempt to re-establish research as a basic activity of the Bureau, and Egon Guba was appointed as the head of this division. The division was liquidated three years later when Nisonger retired and Guba replaced him as the Bureau's seventh director. Like Foshay before him, Guba was expected to resuscitate the Bureau's research orientation. At this time about 90 per cent of the Bureau's budget was devoted to field services.

Guba sought to reorganize the Bureau and met for this purpose with a number of committees. Eventually, five divisions were established, and two of these divisions undertook several new research projects with outside funds. An Ad Hoc Division comprised a number of projects which were facilitated for faculty members. During the same period, the number of service studies conducted by the Bureau declined. This drop in service work was apparently an outgrowth of staff meetings which were convened to discuss the problem of field service, although as the Annual Report for 1963 points out, there also resulted "considerable uncertainty about how to proceed to improve" the field service program. And this report goes on to note: "Accordingly, no step-by-step plan has evolved." In essence, Guba sought to redefine services as developmental and demonstration activities based on empirical knowledge.

Guba has summed up his experiences as bureau director in a recent paper as follows: "It is very difficult indeed not to be responsive to persons seeking help. Their cases are generally well stated and their situations are often nearly desperate. To turn one's back on them is almost unthinkable. It is this kind of siren song that can quickly divert what are necessarily meager research resources into the insatiable channels of service. I reiterate again that it is my personal conviction that a University must establish some reasonable posture toward rendering field service, but the existence of a research bureau renders almost impossible the maintenance of this posture at a balanced level."[16]

The adaptations which were made to the demand of public schools for field services in the organizations we have examined, and the effects of different approaches to the problem, suggest that the continuance of research programs has often hinged upon the manner in which field services have been dealt with.

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[16] This historical case study of the BERS is based on the works of Chapman and of Miller, field interviews conducted by Sidney Spivack and by Sam Sieber, annual reports, and the questionnaire received from the director. Guba has set forth his views in a paper delivered at the conference for Research and Development in Education, February, 1966, Chicago.

Since the case histories we have examined reach back to a period when field services were dominant in research bureaus, it might be thought that in the present age when research is in the ascendancy service work is assigned a special place within units to avoid interference with more basic scholarship. It is true that the practice of assigning services to a separate division within units is fairly widespread. Forty-four per cent of the units which perform services for local schools as well as conducting research have established some kind of divisional boundary between the two functions. Still, this practice is followed by less than a majority of the units which perform services. Further evidence of overlap between the two types of activities is shown in the fact that in units which provide field services, 31 per cent of the professional personnel per unit engage in both research and service. And the directors of these units tend to prefer for the same staff members to engage in both activities (56% prefer this arrangement). In sum, despite the problems which have arisen in combining research and service, there is still a good deal of functional overlap within research units.

We saw earlier that most directors of research units denied that service work in their units drew personnel and resources away from educational research. A reason that was frequently given for the lack of difficulty was the positive contribution of service activities to research. Here are some pertinent replies:

> Only way researchers can be relevant to those in the field is to be purposively involved.
>
> Field service brings a touch of reality to faculty members.
>
> Our experience has been that field service and research-mindedness are mutually augmentive.
>
> We do both, and work in school systems provides contacts and raw material for research.
>
> I think these are related aspects of research and diffusion of research.

On the other hand, the replies of directors who claimed that services interfered with research activities in their units sound equally convincing:

> I suspect that we "grease the wheel that squeaks"--that we supply the service that is demanded so that research, as such, suffers.
>
> Services detract from research. Our major problem is that when a faculty member conducts research on a relevant educational problem he is harassed for service and implementation.
>
> Yes, it is a problem. The only answers are: (1) more money and personnel, (2) ignore requests of school systems.
>
> Yes. Could be alleviated by establishing a separate affiliated services unit.
>
> Yes, (Solution:) Special limited assignment to field services.

We are not able to provide direct statistical evidence of the deleterious effect on research of service pursuits within bureaus. That serious problems do sometimes arise is shown by our case histories and by the replies of directors quoted above. In addition to these anecdotal materials, however, we have indirect statistical evidence of the effect of service orientations. For when we classify the research units according to the proportion of the budget which is devoted to research rather than to service, we are able to draw a fairly detailed profile of service-oriented units. And we consistently find that service-oriented units are less likely to contain the ingredients of a lively research climate. As pointed out in Chapter IV (Table 4.18, p. 140), service-oriented units have fewer joint arrangements with the liberal arts and science departments than research-oriented units. Moreover, staff members are less often recruited from behavioral science departments, and are less likely to be teaching in these departments outside of education; and students also are less often drawn from non-education divisions. We also saw in Chapter IV (Table 4.7) that the research funds in these units were less often provided by the federal government (at a time when the U.S.O.E. was mainly funding project research). These features of units where service is prevalent are signs of an orientation which de-emphasizes empirical scholarship. But perhaps the most telling indication of the failure of a research climate to emerge in these units is the fact that the research productivity of the directors is highly negatively related to the service orientation of the unit. This fact is shown in Table 6.7. (It will be recalled from the preceding chapter that the research productivity of directors is measured by the ratio of published research articles and monographs per year of age.) As shown in this table, directors of highly research-oriented units are three times as productive as directors of the least research-oriented units. If the productivity of the directors can be treated as symptomatic of the productivity of staff members, then it is quite clear that service units are not contributing their share to the fund of educational research. This result, together with previous considerations, prompts us to conclude that the provision of services by research units is a serious obstacle to the conduct of research which is of interest to educational scholars.

TABLE 6.7

Research Productivity of Directors, According to the Research Orientation of the Unit

Research Orientation of Unit (% budget for research)	Research Productivity Ratios*	Number of Directors
High (90%+)	.60	(14)
Medium (50-89%)	.47	(16)
Low (0-49%)	.21	(18)

*Number of published research articles or monographs per year of age.

A Modest Proposal

There is one means of relieving schools of education from much of their service load which was widely endorsed by the deans when proposed to them in our questionnaire. The question was as follows:

> Suppose the State Department of Education had the facilities and the legislative authority to provide many of the services to local school systems which are now provided by the university--how would you feel about its assuming more than half of the service work in which the faculty of the graduate department is now engaged?

Almost half of the deans approved of this idea without reservation, and some were even enthusiastic. Here are some selected replies:

> Amen! Would permit faculty emphasis to concentrate on research and teaching.

> An excellent idea. Our State Education Department is staffed for this and can do it well. We have other responsibilities better suited to us.

> In favor -- so as to release university people for more primary research.
>
> State departments ought to do more. Some of the tasks are routine and the professor should participate in these only occasionally.
>
> It would be desirable. Our energies could then be applied to work which no one else could do, at least so well.

Several of the deans favored the idea in principle, but feared that the State Department did not have the skills to carry out the job competently:

> If the Department were authorized salaries to compete for competent technicians, I'd embrace this notion. The service load is interminable and we cut it off arbitrarily; there is only a part-time need for our people to be involved in public school work for our own betterment; the balance is drudgery.
>
> If the quality of the personnel were assured, this would seem to me highly desirable . . .
>
> I would not necessarily object to this if selected services were handled by a qualified staff. I say "selected" because I believe that a university often can, with its total resources, do a better job than another kind of agency . . .
>
> We would welcome it providing adequate and competent staff were available in the State Department.

Further, several of the deans who opposed a shift of services to state departments of education did so on the grounds that the State agency did not presently possess the requisite skills. For example:

> Would be opposed: State Department positions (with no institutional affiliation) cannot draw the same high level personnel as will be associated with universities . . .
>
> The State Education Agency presently does many of the same kind of field activities that our staff does -- but not as well.
>
> In our State Department of Public Instruction researchers are not available -- in my judgement.

On the other hand, there were a few deans who objected to the implication that faculty members would become isolated from the schools, as follows:

> Faculty of graduate school of education needs to participate in field services for stimulation and growth in research as well as in teaching.
>
> The work that our professors do is helpful to both the research and the on-campus work of the professors. I would not want the professors kept out of the schools.
>
> For faculty contact with actual school situation occasional field service has professional benefits and I would not like to see it eliminated.

Thus, the desire to keep abreast of school problems is sometimes seen as preferable to the relinquishment of services. But if personnel in the state departments of education were as fully qualified as the universities to render important services, then it would seem that a sizable majority of the deans would welcome a shift of services to these agencies. In view of the recent increase in federal funds allotted to state departments for research and development, it may be that the universities will soon be partly relieved of their service obligations. Such a development, of course, would not alleviate the serious competition between research and service for manpower, but it might serve to re-focus the energies of schools of education on more systematic kinds of inquiry into the educational enterprise.

G. Summary and Conclusions

We have suggested that the needs and interests of educational practitioners have strongly influenced opportunities for scholarly work in professional schools of education as a consequence of the peculiarly close relationships between professional departments and school systems. While we do not claim to have exhausted the conditions affecting these relationships, it is our impression that at least five dimensions need to be taken into account. We have designated these factors as

(1) ideological and (2) patronage ties between practitioners and their training agencies, (3) the monopoly of professional skills and knowledge possessed by the professional schools, (4) the desire of professors to participate in practice, and (5) the need of practitioners to legitimize professional authority. The last source we feel to be especially critical for arriving at an understanding of the historical impact of school needs on research. Accordingly, we sought to trace the unfortunate effect of education's "permanent crisis" on: research topics and objectives, methodologies, conceptions of the nature of "educational research," research manpower, and research programs within bureaus.

In light of the fact that services have declined historically as part of the work of research units in education, we assume that many units have relinquished their service activities to separate agencies. In spite of this historical trend, however, about two-thirds of the units in our study perform services of one kind or another for schools, and sometimes also for the university or college administration. Further, there is still a good deal of overlap in personnel who are providing service and doing research; and less than half of the units which combine service and research have established a separate service division within the unit.

In spite of the claim of some directors of service and research units that field service work actually contributes to research capabilities, indirect evidence of the research climate of these units suggest that this has not been the case. Specifically, there are fewer contacts with behavioral science departments outside the school of education, research funds are less often supplied by the federal government (which strongly emphasized project research at the time of our survey), and the research productivity of their directors is much lower than that of directors of research-oriented units.

Finally, we showed that deans tend to endorse the proposal that more than half of the services provided by their schools be turned over to state departments of education, provided that these agencies develop the skills necessary for carrying out service assignments effectively.

Given the present social structure of education in the United States, services for school systems comprise a vital function of professional expertise. We would not wish our remarks on the conflict between service and research to imply otherwise. But it is equally vital to develop a strong research climate within schools of education; and service involvements, especially in public institutions, have created barriers to the emergence of this climate. Relinquishment of services by units which are seriously devoted to research, and even by schools of education which wish to enhance their research capability, seems to be a worthwhile solution. This recommendation should not be interpreted as meaning that research and action should not be combined in certain enterprises. In our final chapter, we point out several ways in which research and the provision of services need to be integrated so as to enhance both functions. It is mainly the provision of routine services for their own sake which has occupied our attention in the present chapter.

CHAPTER VII

TRAINING FOR CAREERS IN EDUCATIONAL RESEARCH

Few problems in the advancement of educational research have been discussed with greater vigor and consensus than the scarcity of qualified researchers. In addition to a number of critical commentaries on the state of educational research training, there are currently at least four major projects underway which are investigating the conditions affecting the production of researchers and the outcomes of various training experiences,[1] and a fifth project has recently been completed.[2]

If the preparation of educational researchers has been discussed as a serious problem for a number of years, the increased financial commitments of the Office of Education to research and development has given the problem new urgency. The founding of research and development centers and of regional laboratories, and the new funds for project research have increased the demand for qualified researchers in schools of education far beyond the current supply. A rather clear demonstration of the deficiency of researchers in schools of education is afforded by our analysis of trends in sources of proposals submitted to the Cooperative Research Program, U.S.O.E., in 1956-63 (Appendix A).

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[1] These projects are being conducted by David Clark and Robert Bargar at Ohio State University; by David Wilder at Columbia University; and by Nancy Millikan, also at Columbia University.

[2] Guy T. Buswell, et al., Training for Educational Research, final report of Cooperative Research Project No. 51074, U.S.O.E. (Center for the Study of Higher Education, University of California, Berkeley) 1966.

As noted earlier, the number of proposals originating in schools or departments of education remained fairly constant over this period, despite the substantial increase in funds appropriated to the Cooperative Research Program. Proposals from departments outside of education, on the other hand, increased four-fold over the same span of time. Apparently, the fullest resources of schools of education were manifested in the earliest years of the Cooperative Research Program. Since the amount of funds for research has more than tripled since 1962, it is hard to escape the conclusion that schools of education have fallen behind in taking advantage of the available support for research. And while about half of the projects funded by the C.R.P. in 1962 originated in departments of education, today the proportion is closer to 30 per cent according to a recent estimate by a U.S.O.E. official.

Other data from a study recently conducted at Ohio State University suggest that a low level of manpower characterizes the whole range of research related to education.[3] According to this study, only 3.1 per cent of individuals who have conducted research "oriented towards the concerns of professional education" were devoting full-time to research. Half of those included in the study devoted only 1-20% of their professional time to research.

In recognition of this state of affairs, the Office of Education has suggested that in order to attract the best talent to the regional laboratories, staff salaries may have to be offered in the $30,000-

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[3] Robert R. Bargar, "Who Is The Educational Researcher?", in The Training and Nurture of Educational Researchers, Sixth Annual Phi Delta Kappa Symposium on Educational Research, Egon Guba, ed., Phi Delta Kappa, 1965; also Robert R. Bargar, Egon Guba, and Corohann Okorodudu, Development of a National Register of Educational Researchers, Final Report, Cooperative Research Project No.E-014;Dec.1965 (Ohio State U).

$40,000 range.[4] But the greatest hope is being placed upon the development of new talent, and the Office of Education has made available $8 million for support of training programs in universities, state departments, and other agencies engaged in research on education for the first year of the program. No doubt the opportunities for training will expand markedly as a result of this new program.

The present chapter will describe opportunities existing in schools of education for research preparation, and seek to disclose institutional and training arrangements which are associated with output of researchers. The chapter is divided into five parts: (1) a brief assessment of the emphasis placed on research preparation in schools of education; (2) a framework for viewing the institutional arrangements which are believed to affect the production of researchers; (3) an exploration of factors related to the output of researchers according to the framework described in the preceding section (with special attention to the situation outside of research bureaus); (4) an overview of training arrangements within bureaus and the production of researchers by bureaus; and (5) a summary section.

A. An Assessment of the Emphasis on Research Training in Graduate Schools of Education

Only a small proportion of schools treat the preparation of researchers as a major goal. This result emerges from the deans' responses to the following question:

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[4] American Educational Research Association Newsletter, Vol. XVI, No. 4, (October, 1965), p. 4.

> On the whole, which type of preparation receives the greatest emphasis in your graduate school or department of education?

As shown in Table 7,1,only 7 per cent of the schools place greatest emphasis on research preparation. The largest proportion of schools emphasizing the preparation of researchers also emphasize the preparation of teachers and administrators (17%). Thus, seventy-one per cent of the deans claimed that research training was not one of the school's main emphases. These data reveal the existence of considerable untapped institutional resources for the training of researchers.

TABLE 7.1

Proportion of Schools Emphasizing the Preparation of Researchers

Type of Preparation Emphasized	% Schools	
Research		
Research only	7%)	29%
Research and teaching	4)	
Research and administration	1)	
Research, teaching, and admin.	17)	
All other (excluding research)	71	
	100%	
Number of schools:	(72)	

We also asked the deans whether there was a "training program for people who want to make research a career." As shown in Table 7.2, 17 per cent of the schools have some such program, and another 22 per cent provide research training primarily through the regular graduate degree program. Half of the schools do not have training programs for seriously committed researchers. Thus, once again our findings point to a large institutional reservoir for the training of researchers.

TABLE 7.2

Proportion of Schools with Programs for Training Researchers

Is there a program for people who want to make research a career?	% Schools
Yes	22%
No, except the degree program	27
No	51
	100%
Number of schools:	(73)

But the extent to which schools of education are seriously seeking to prepare researchers cannot be gauged from the responses to these questions considered independently of one another, for there are several schools which emphasize research preparation but do not have a training program and there are a number of schools which do not emphasize research preparation but do have programs. In Table 7.3 we have classified schools according to both emphasis on research training and existence of a training program. The proportion of schools falling into each class formed by the combination of the two dimensions is shown in the table.

The largest proportion of schools neither emphasize research training nor provide a program (41 per cent). Only 3 per cent of the schools have a program other than the regular degree program and also emphasize research training. Another 14 per cent, however, emphasize research training and provide for it through the regular degree program; which yields 17 per cent which both emphasize research training and provide some form of program for students who want to make research

TABLE 7.3

Proportion of Schools Emphasizing Research Training and Offering a Program for Research Training

Emphasizes research training*	Has a training program	% schools
Yes	Yes	3%
Yes	No, except degree	14
Yes	No	12
No	Yes	14
No	No, except degree	16
No	No	41
		100%
	Number of schools:	(64)

* A school was counted as "emphasizing" research training if it did so either exclusively or in combination with other types of preparation.

a career. In other words, only a small minority of schools of education were making serious efforts to train educational researchers at the time of our survey in 1964-65.

The conclusion that schools of education are not training researchers is borne out when we turn to the amount of opportunity for apprenticeship on faculty projects. Outside of bureaus, only 2.4 per cent of all resident graduate students are working on faculty projects; and the same proportion of all doctoral students in schools with bureaus are working on bureau projects. In short, intensive research preparation through internship on projects is quite rare.

The final test of research training is the number of doctoral recipients who go on to do research and the quality of their work. As already noted, our study of sources of research proposals submitted to the U.S.O.E. over a span of several years suggests that the number of researchers in schools of education is quite inadequate to meet the demands being placed on the universities for educational research. We are now able to provide new evidence of the low level of manpower derived from our survey of deans. In the deans' questionnaires we inquired about the proportion of doctoral recipients in the past three years who had entered various positions immediately after receiving the degree. Included among the alternative positions were research jobs in higher education, in school systems, in state departments, and in independent research agencies. The question was as follows:

> Please estimate the proportion of doctoral recipients in the past three years whose first position after receiving the degree was in each of the following fields.

The mean proportions of doctoral recipients per school entering each of the positions listed in our question are shown in Table 7.4. (Since we asked for proportions rather than numbers of students, we must report the mean proportion per school rather than percentages based on total doctoral recipients.)

As one would expect, the largest proportion entering research positions were employed by institutions of higher learning and by state departments. But what may be surprising is the small proportion of doctoral recipients who were primarily engaged in research even in these two settings. If we combine the proportions entering research positions anywhere, the mean proportion is only 6.3 per cent. This is a startlingly low figure for the productivity of personnel who are primarily researchers. We do not assume, of course, that all worthwhile research is done by individuals who spend most of their time conducting empirical

TABLE 7.4

Mean Proportion of Doctoral Recipients per School in Past Three Years Who Immediately Entered Various Positions

	Mean %	
Primarily Research		
In school systems	0.9%)	6.3
In colleges or universities	2.8)	
In state departments of education	2.0)	
In other agencies	0.6)	
Non-research positions		
Primarily teaching		
In school systems	8.3	
In colleges or universities	42.0	
Administration		
In school systems	22.2	
In colleges or universities	9.6	
Field services in colleges or universities	1.2	
Guidance in school systems	7.3	
All other	3.6	
	100.5%	
Number of schools:	(63)	

studies. Rather, our data should be interpreted as representing the production of highly committed young researchers.

Table 7.5 shows the proportion of schools which produced varying proportions of "primary" researchers in the past three years. Thirty per cent of the deans claimed that their schools had not produced a single doctoral recipient who immediately entered a position where research was a primary task. About half of the schools produced only 1-10 per cent researchers among their doctoral recipients, while about a fifth produced more than 10 per cent. Stated differently, in about three-quarters of the schools, not more than 10 per cent of the recent doctoral recipients have entered positions where research was a primary responsibility.

TABLE 7.5

Proportion of Schools with Varying Proportions of Doctoral Recipients Entering Research Positions in Past Three Years

Per cent students entering research positions	% schools
None	30%
1 - 10%	48
11% or more	22
	100%
Number of schools:	(54)

Later on we shall use the proportion of doctoral recipients entering research positions as a measure of the production of scholars, and a number of institutional features will be related to this statistic. So far we have simply shown that the overall production of educational researchers immediately following the degree is proportionately quite small. But before exploring the institutional factors which are associated with the production of scholars, we need to formulate some theoretical guidelines for conducting the analysis.

B. A Conceptual Framework for Examining the Production of Researchers

A perusal of the literature on development of research personnel in schools of education indicates three major problem areas: (1) the recruitment of talent, (2) the research climate of the school, and (3) the provisions which are made for training researchers.

It is often claimed that educational departments attract few of the ablest students in the university. A recent study of career aspirations in a variety of fields reveals that students planning to study education at the graduate level have relatively poor academic records. Further, it seems on the basis of this study that education undergraduates who intend to do graduate work are less talented (in the sense of academic achievement at least) than those who do not plan graduate study:

> . . . (undergraduates) heading for education are neither the best nor the worst in terms of academic accomplishment: In fact, they are close to the average with several career fields, notably some of the biological sciences, recruiting heavier proportions of persons from among the least talented groups. This finding partly reflects the fact that this is a field that is chosen heavily by women whose academic performance in college is on the average better than that of men, but it also indicates that the educators are not as badly off as is usually thought.
>
> However, it we compare educators who are going on to postgraduate work with those from other fields who are going on, then prospective educators are fairly low on the academic totem pole. In our findings, medicine recruits most heavily from the top undergraduate performers with the traditional liberal arts and sciences not very far behind them while education shares with agriculture, social work, and some of the biological sciences a fairly poor showing in the quality of its students going on to graduate work. About a third (30.1%) of all students going on are in the top fifth of academic performance while only 17.8% of the educators fall into this group. Again, this finding is partly confounded by sex since women are high academic performers and are less likely than men to go on to graduate work.[5]

These findings suggest that there is more talent in the undergraduate departments of education than ever arrives in graduate schools. The advisability of identifying talent in the undergraduate departments is obvious.

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[5] Peter H. Rossi, James A. Davis, Richard J. McKinlay, "Social Characteristics of 1961 College Graduates Entering the Field of Education," a paper presented at the Annual Program of the National Society of College Teachers of Education on February 16, 1962, in Chicago, Illinois. (pp. 4-5). The authors are with the National Opinion Research Center, University of Chicago.

One of the sharpest spokesmen for the critical importance of recruiting a high level of talent is Julian Stanley, President of the American Educational Research Association. In a recent paper Stanley places primary emphasis on recruitment:

> To me the key is quality of input. High-quality beginning graduate students will force the quality of the doctoral process upward, or they will desert the program for one more consonant with their abilities and motivations. With high-quality input, we need not fear that the output will be of low quality, even though the Ph.D. degree is earned quickly.[6]

Although Stanley here emphasizes quality rather than quantity of researchers, his remarks about the output of his own Laboratory of Research Design at Wisconsin suggest that commitment to a research career is closely linked with quality.

But even when the best students find their way into graduate schools, it has been claimed that the requirement of professional experience by many schools means that these students will have already decided upon a non-research career when they undertake graduate work. At the very least, a good many years of their scientific life may be wasted in classrooms. In a study of the backgrounds of highly productive psychologists compared with other psychologists, Clark found that psychologists specializing in education took a good deal more time between graduation from college and receipt of the doctoral degree than psychologists in other fields.[7] Among the highly productive psychologists, almost half (46%) of those specializing in education had taken eight or more years to obtain the doctorate, compared with 35 per cent in clinical psychology, 32 per cent in industrial psychology, 28 per cent in general psychology, 25 per cent in personality and social psychology, and 16 per cent in experimental and physiological psychology. Furthermore, the time span between college graduation and the doctorate clearly differentiated the highly productive educational psychologists from their less productive colleagues. Whereas 48 per cent of the highly productive psychologists took 8 or more years, 79 per cent of the less productive educational psychologists took this much time -- a difference of 31 per cent between the two groups.

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[6] Julian Stanley, "The Improvement of Educational Experimentation," in Stanley, Julian C., and Elam, Stanley M. (Eds.), Improving Experimental Design and Statistical Analysis. Chicago: Rand McNally, 1966.

[7] Kenneth Clark, America's Psychologists: A Survey of a Growing Profession, Washington, D.C., American Psychological Association, 1957.

Entrance requirements of graduate schools of education for professional experience may be largely responsible for the delay in receiving the doctorate, even for students who are strongly interested in a career of research. It is quite clear, for example, that teaching experience prior to graduate work reduces the likelihood of pursuing a research career. According to a recent study by Buswell of doctoral recipients in education in 1954:

> The number of years of teaching experience prior to the doctor's degree is negatively related to research production in the ten years following the degree...for the Ph.D.'s, 18.3 per cent of the group doing research had no previous teaching experience as compared with 2.6 per cent of the no-research group. In the research group, 23.3 per cent had 11 or more years of teaching experience as compared with 40.0 per cent in the no-research group.[8]

A second problem area in the preparation of researchers which emerges from the literature is the prevailing research climate of graduate schools of education. If the faculty is not actively pursuing research interests, or if administrative arrangements make it difficult for the faculty to realize their research goals, then the resulting orientation of the school may militate against the development of young researchers. One of the strongest statements on the necessity of providing a lively research climate for students is found in a report on training of the American Psychological Association, which has been cited by Fattu as applicable to educational research:

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[8] Buswell, op cit., p. 15.

> Everything we have found points to the fact that course work, formal examination requirements, and anything else that could be standardized concerns what is ancillary to research training. What is of essence is getting the student into a research environment and having him do research with the criticism, advice, and encouragement of others who suffer the same pain and enjoy the same rewards. . . Research is learned by doing and taught mainly by contagion. Research must first be going on if there is to be research training. What formal courses are offered is no index of quality of a department as regards such training. . .[9]

Thus, this viewpoint stresses the crucial importance of a supportive research climate for the development of researchers.

A third problem area has perhaps attracted more attention than the preceding ones because it concerns arrangements which are more easily manipulated than either talent or research climate, namely, the provisions made for training researchers. Arrangements such as course work, supervision of dissertations, special programs for methodological training, and the Ph.D. as distinguished from the Ed.D. program are examples of provisions aimed at the production of educational researchers. So much has been said and written on the quality of training provided for educational researchers that it would be redundant for us to repeat these criticisms here. Suffice it to say that the deans in our survey were overwhelmingly of the opinion that the nature of research training in schools of education has constituted a hindrance to the advancement of educational research. Almost half of the deans (47%) checked in our questionnaire that the quality of research training was a "major hindrance," and a third checked "minor hindrance" for a total of 80% who felt that training had been a problem. (See Appendix C, Table 1, for the question and the complete responses.)

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[9] Report of a seminar on Education for Research in Psychology, American Psychologist, Vol. 14, (April, 1959), 167-79. See also, Nicholas Fattu, Review of Educational Research, XXX, No. 5, (Dec., 1960), 414-415.

The findings which we present in the following section are organized around these three pivotal areas of concern. In a sense, each area could be characterized as posing a "theory" of scholarly productivity. Those who claim that the recruitment of talent is the single _most_ important factor might be thought of as holding a theory of _self-actualization_. Those who believe that the intellectual qualities and preoccupations of the institution are _most_ determining could be said to hold a theory of _institutional acclimatization_. And those who place their hopes chiefly in arrangements for research training could be characterized as holding a theory of _guided learning_. (Incidentally, these three theoretical modes for looking at the production of scholars have their analogs in theories of socialization which stress either the attributes of the _socializee_, the social and cultural _setting_ of socialization, or the efforts of the _socializer_.)

C. Production of Researchers According to Student Selection, Research Climate, and Training Provisions

1. Student Selection and the Production of Researchers

In order to obtain an approximate measure of the level of talent entering the graduate school, we computed the proportion of student applicants who were accepted in the beginning of the academic year of our survey, which measure we shall call the selectivity of the schools. This information was derived from the following question which was asked of deans:

> Please provide the following figures for new graduate students in education for the academic year of 1963-64.
>
> _______Applied for admission to graduate school
>
> _______Accepted for admission
>
> _______Actually registered

(So that the respondents wouldtake the question seriously enough to provide reliable data, this was the first question asked in the questionnaire.) To be sure, there are a number of institutional attributes associated with having a highly select student body. Therefore, each of these correlates of selectivity will have to be controlled in order to measure the independent relationship between selectivity and the production of researchers. But first, let us look at the overall relationship between selectivity and production of researchers.

Table 7.6 sets forth the mean proportion of doctoral recipients per school in the past three years who entered positions in which research was a primary responsibility, according to three levels of selectivity. The result is fairly clear: the greater the selectivity, the greater the output of researchers. This finding is not simply a matter of public or private control. Although private universities are more selective, public universities are slightly more productive of researchers, as shown in Table 7.7.

TABLE 7.6

Selectivity and Production of Researchers

Selectivity (% applicants accepted)	Mean % Doctoral Recipients Entering Research
High (20-59%)	9.08 (12)*
Med. (60-79%)	8.39 (18)
Low (80-100%)	2.96 (24)

*In this and all subsequent tables, the number in parentheses is the number of schools upon which means are based.

TABLE 7.7

Type of Control and Production of Researchers

	Mean % Doctoral Recipients Entering Research
Public	6.17 (41)
Private	4.96 (25)

There are several other institutional features, however, which are related to both selectivity and the production of researchers. In order to see if these variables account for the observed relationship with selectivity, we shall show the differences between productivity in high and low selective schools without controlling for the given variable, but using the same cases contained in our control table. This procedure is followed because of the frequent loss of cases when instituting controls, which means that we cannot compare our "controlled" differences with the overall difference between high and low selectivity if we wish to make accurate comparisons.

In order to clarify our methods of computation and presentation, let us use our Index of Research Emphasis as an example. As mentioned in a previous chapter, this index was constructed by adding up the number of groups in and around the university which were reported by the deans to rank research as a responsibility of the education faculty above teaching and service. The groups included in the list were the State legislature, the trustees, the President, the dean of the graduate faculties, the education dean himself, the education department chairmen, the education faculty, the liberal arts faculty and administration, school systems, and outside funding agencies. Table 7.8 shows the mean proportion of doctoral recipients per school who entered research positions according to (1) the selectivity of the school and (2) the position of the school on the Index of Research Emphasis. Thus, on the average, 10.79 per cent of the doctoral recipients entered "primary" research positions from schools which are highly selective and which score high on the Index of Research Emphasis. (Selectivity has been dichotomized in order to obtain a sufficient number of cases in each cell for computing means. This dichotomy will be used in all subsequent control tables.)

TABLE 7,8

Index of Research Emphasis and Production of Researchers, According to Selectivity of the School

	Mean % Doctoral Recipients Entering Research		
	Selectivity		
	High (20-79% Accepted)	Low (80-100% accepted)	Diff. between means
Index of Research Emphasis (No. of groups which rank research first according to dean)			
High (4+)	10.79 (16)	3.29 (7)	+7.50
Med. (1-3)	6.82 (11)	3.15 (13)	+3.67
Low (0)	2.00 (1)	1.75 (4)	+0.25
		Total diff.:	+11.42
		Aver. diff.:	+3.81
Production of researchers according to selectivity (i.e., selectivity uncontrolled)	8.86 (28)	2.29 (24)	+5.57

The numbers on the right-hand side of the table represent the differences in production of researchers between high and low selective schools within each class of "research emphasis." By averaging these differences along the right-hand side of the table we obtain (1) the average difference between productivity means in high and low selective schools controlled for degree of research emphasis. (The same procedure could be used in computing the productivity difference between high and low scores on the Index of Research Emphasis, but for the moment this statistic does not concern us.) Finally, by using only the cases contained in the table, we have computed (2) the productivity difference between high and low selective schools without controlling for research emphasis. These numbers are the first figures shown in Table 7.9. Thus, Table 7.9 sets forth the mean differences in production of researchers between high and low selective schools (1) with a third variable controlled, and (2) with a third variable uncontrolled, but using the same cases that result when we institute controls. If the two figures are similar, then we can conclude that the control variable does not account for the relationship between selectivity and the production of researchers. Let us now turn to an examination of this table.

All of the control variables listed in Table 7.9 are related to both productivity and selectivity. The variables have been grouped according to whether they represent the research climate of the school or provisions for research training afforded by the school. And a cursory glance at the table reveals that selectivity is related to productivity regardless of any of our indicators of research climate or of the extent to which provisions are made for training researchers. Selectivity therefore emerges as an important predictor of the production of "primary" researchers.

As mentioned earlier, student recruitment patterns can be measured in another way besides looking at the selectivity of the schools. Several writers have commented on the effect of entrance requirements on the career goals of graduate students in education. Specifically, it has been claimed that when professional experience or teacher training is required as a condition of enrollment in the graduate program, the entering students are less likely to adopt research as an alternative to careers of teaching, administration, and

TABLE 7.9

Selectivity and Production of Researchers Controlled by Research Climate and Training Provisions*

	Differences between Mean Proportions of Researchers Produced	
Control Variables	(1) High vs low selectivity (controlled)	(2) High vs low selectivity (uncontrolled)
1. Research Climate		
Index of Research Emphasis (ranking of research as responsibility of faculty)	+3.81	+5.57
Research Quality Index (judgment of respondents as to schools doing best research)	+7.27	+5.41
Index of Interdisciplinary Relations (number of joint arrangements with departments outside education)	+6.03	+5.71
Existence of a Research-Oriented Bureau (50%+ budget for research)	+8.13	+7.40
2. Type of graduate training and training provisions		
Type of degree offered (Ph.D. only vs Ed.D. only)	+7.71	+5.71
Proportion of doctoral candidates working on Ph.D.'s	+5.48	+5.71
Proportion of research courses with prerequisities or permission of instructor	+5.47	+5.79
Number of non-education departments offering required courses for doctorates	+5.62	+4.88

*All the control variables in this table are related both to selectivity and to production of researchers. Additional measures of research climate and of training provisions will be discussed later on.

service. By examining the production of researchers in schools with various entrance requirements, we may be able to shed some light on this question. Table 7.10 presents the pertinent results according to whether professional experience or a teaching certificate is required.

TABLE 7.10

Entrance Requirements and Production of Researchers

		Mean % Doctoral Recipients Entering Research		
		Teaching Certificate Required		
		Yes	No	Difference
Professional Experience Required	Yes	2.27 (11)	4.13 (8)	-1.86
	No	6.15 (13)	7.03 (34)	- .88
	Difference	-3.88	-2.90	

Mean difference according to teaching cert. -.98

Mean difference according to prof. exper. -3.39

As can be seen in this table, schools which require both professional experience and a teaching certificate are least productive of researchers. Schools requiring only a teaching certificate or neither a certificate nor experience are most productive. Further, it appears that the requirement of professional experience is the only requirement of the two which is related to productivity regardless of the existence of the other requirement. As shown in the bottom row of Table 7.10, schools which require professional experience are somewhat less productive of researchers regardless of a teaching certificate requirement.

It is of course true that the requirement of professional experience is more common in schools which do not emphasize research training. For example, as shown in Table 7.11, schools which require professional experience tend to have a smaller proportion of doctoral candidates working on Ph.D.'s. Thus, we need to see if the requirement of professional experience is related to production of researchers regardless of an emphasis on research training.[10]

TABLE 7.11

Proportion of Doctoral Candidates Working on Ph.D.'s According to Entrance Requirement of Professional Experience

% of Doctoral Candidates Working on Ph.D.'s	Professional Experience Required	
	Yes	No
None	47%	24%
1-30%	21	24
31-99%	26	27
100%	5	25
	100%	100%
	(19)	(51)

When we examine the production of researchers in schools with the requirement of professional experience, according to proportion of doctoral candidates working on Ph.D.'s, the negative relationship with production of researchers still remains, as can be seen in Table 7.12. The difference is much smaller, however, in schools with a low proportion of Ph.D. candidates.

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[10] As we shall see below, the volume of Ph.D. activity is highly related to the production of researchers.

TABLE 7,12

Production of Researchers According to Entrance Requirement of Professional Experience and Proportion of Doctoral Candidates Working on Ph.D.'s

% Doctoral Candidates Working on Ph.D.'s	Professional Experience Required		Difference
	Yes	No	
High (31-100%)	1.50 (4)	9.75 (24)	-8.25
Low (0-30%)	2.25 (12)	3.81 (21)	-1.56

In sum, our data support the claim that the entrance requirement of professional experience reduces the production of researchers, and this is especially true in schools with more Ph.D. candidates. We have not sought to measure the effect of entrance requirements on the substance or quality of research carried out, however. This question still remains to be settled and can be studied only by relating the quality of output of individuals to the types of institutions where they received their training. The importance of selectivity and of entrance requirements in predicting the production of researchers, however, lends weight to the theory of "self-actualization" mentioned earlier.

But what of the joint effect of selectivity and prior professional experience? As suggested in our introductory section, it is possible that even highly able students who spend a good deal of time in professional work before entering the graduate program are diverted from research careers. Table 7.13 suggests that this may well be the case. For here we see that highly selective schools which require prior professional experience have a much lower output of

TABLE 7.13

Production of Researchers According to Entrance Requirement of Professional Experience and Selectivity

Selectivity	Professional Experience Required		Difference
	Yes	No	
High (20-79%)	2.80 (24)	9.67 (10)	-6.87
Low (80%)	1.43 (19)	3.21 (7)	-1.78

researchers than the same type of school *without* this requirement. However, these results could be influenced by the higher proportion of *Ph.D.* candidates both in highly selective schools and in schools without the entrance requirement. Thus, we shall have to examine the relationship between selectivity and entrance requirement within levels of Ph.D. activity. Table 7.14 makes this comparison possible. Comparing columns 1 and 2, and columns 3 and 4, we see that the production of researchers is negatively related to the requirement of professional

TABLE 7.14

Production of Researchers and Entrance Requirement of Professional Experience, According to Selectivity and Ph.D. Activity

% of Doctoral Students Working on Ph.D.'s	Selectivity			
	High (20-79%) Professional Experience		Low (80-100%) Professional Experience	
	Yes (1)	No (2)	Yes (3)	No (4)
High (31-100%)	2.00 (3)	13.00 (14)	0.00 (3)	4.43 (7)
Low (0-30%)	3.14 (7)	5.00 (10)	2.50 (4)	2.50 (12)

experience regardless of level of Ph.D. activity and level of selectivity, except when selectivity and Ph.D. activity are both low. In this latter instance, it may be that the production of researchers is so low that the professional experience requirement does not reduce it any further. Also, by comparing the production of researchers in schools with high and low proportions of Ph.D. candidates, we see once again(in Table 7.14) that volume of Ph.D. activity is related to research careers only when professional experience is not required. It seems evident that emphasis on professional experience is detrimental to the production of researchers, and that even the best students may suffer from this emphasis.

We shall now turn to the second category of factors which are presumed to influence research training, namely, the research climate of the school of education. In terms of our theoretical framework, these factors pertain to the question of institutional acclimatization.

2. Research Climate

Six measures have been used to represent this area of concern: the Index of Research Emphasis (already described), the Research Quality Index (based on the deans' and coordinators' choices of schools doing the best research), the Index of Research Scope (measured simply by summing the number of substantive topics on which research is being conducted outside of bureaus), the Index of Interdisciplinary Relationships (based on the number of joint arrangements with departments outside the school of education), and the volume of faculty research (measured by (1) the proportion of faculty outside bureaus doing research and (2) the existence of a research-oriented bureau).

All except one of these measures of research climate are related to the production of researchers. The one exception is the volume of faculty research outside of bureaus (line 5 in Table 7.15). By contrast, the presence of a research-oriented bureau is related to the production of researchers. It is quite possible then that research units contribute more than individual faculty researchers to the development of a new generation of research workers. We shall return to this question when we explore several points of comparison between the training provided by bureau and by non-bureau settings.

But even those dimensions of research climate which are related to the production of researchers seem to be less important than the dimension of selectivity, which consistently produces greater differences between productivity means regardless of our control variables. Table 7.16 makes this quite clear. The figures in the first column are the differences between means at the high and low point on each of the six scales of research climate. (With the exception of the Index of Research Emphasis, which was dichotomized, high and low points on each scale of research climate were the same categories used in Table 7.15. However, only those cases were used for computing differences which remained after controlling for selectivity. Hence, these differences were not computed from Table 7.15.) The figures in the second column are the average differences between means in high and low selective schools when controlled by each scale of research climate. With respect to five out of the six measures, selectivity produces larger differences. On the whole, therefore, selectivity is a better predictor of the output of researchers than research climate.

TABLE 7.15

Production of Researchers According to Several Measures of Research Climate

	Mean % Doctoral Recipients Entering Research Positions	
1. **Index of Research Emphasis** (number of groups which rank research first)		
High (4+)	6.93	(28)
Medium (1-3)	5.27	(30)
Low (0)	2.17	(6)
2. **Research Quality Index** (judgment of respondents)		
Best research	12.18	(11)
Not best research	4.02	(50)
3. **Research Scope Index** (number of topics of research)		
High (9+)	7.35	(19)
Medium (1-8)	4.50	(28)
Low (0)	4.36	(11)
4. **Index of Interdisciplinary Relationships** (number of joint arrangements with departments outside education)		
High (9+)	7.89	(19)
Medium (5-8)	5.15	(26)
Low (0-4)	4.43	(21)
5. **Proportion of Faculty Outside Bureaus Doing Research**		
High (36%+)	5.60	(15)
Medium (16-35%)	5.00	(18)
Low (0-15%)	5.71	(17)
6. **Existence of Research-Oriented Bureau** (50%+ budget for research)		
Yes	10.56	(16)
No	4.53	(30)

TABLE 7.16

Differences Between Productivity Means for High and Low Selective Schools Controlled by Several Variables

	Difference Between High and Low Points on Each Variable	Average Difference Between High and Low Selectivity with Variable Controlled
Index of Research Emphasis	+4.12	+5.50
Research Quality Index	+7.89	+7.27
Research Scope Index	+3.65	+6.04
Index of Interdisciplinary Relationships	+2.33	+6.03
Proportion of Faculty Outside Bureaus Doing Research	+1.09	+6.74
Existence of Research-Oriented Bureau	+6.17	+8.13

As a matter of fact, it appears that a favorable research climate may contribute to the production of researchers only when the student body is highly select. Data bearing on the joint effect of selectivity and each of six measures of research climate are presented in Table 7.17. And in the case of each variable, with the single exception of Research Scope (line 3), output of researchers substantially increases with better research climate only among highly selective schools.

TABLE 7.17

Production of Researchers According to Selectivity and Several Measures of Research Climate

	Selectivity			
	High (20-79%)		Low (80-100%)	
1. Index of Research Emphasis (number of groups which rank research first)				
High (4+)	10.69	(16)	3.29	(7)
Low (0-3)	6.42	(12)	2.82	(17)
2. Research Quality Index (judgments of respondents)				
Best	13.56	(9)	2.00	(1)
Other	6.11	(19)	3.14	(22)
3. Index of Research Scope (number of topics on which research is being conducted outside of bureaus)				
Large (9+)	12.09	(11)	4.40	(1)
Medium (1-8)	6.55	(11)	2.25	(12)
Small (0)	6.14	(7)	0.00	(2)
4. Index of Interdisciplinary Relationships (number of joint arrangements with departments outside education)				
High (6+)	10.05	(19)	1.33	(9)
Low (0-5)	6.27	(11)	3.93	(15)
5. Proportion of Faculty Outside Bureaus Doing Research				
High (36%+)	14.20	(5)	3.00	(5)*
Medium (16-35%)	5.86	(7)	4.45	(11)
Low (0-15%)	8.00	(9)	0.40	(5)
6. Existence of Research-Oriented Bureau (50%+ budget for research)				
Yes	14.11	(9)	2.33	(3)
No	6.64	(14)	2.91	(11)

* The apparent relationship in this table between proportion of faculty outside of bureaus doing research and productivity is due to the loss of one-third of the cases in the "High" category of faculty research. These cases, which did not supply the information about selectivity, were very low producers of researchers. Overall, there is no relationship between faculty research and productivity, as shown in Table 7.15 (line 5).

Our discussion should not imply that research climate is an unimportant factor in the production of researchers. But it seems that a lively climate is effective chiefly when the ability of the student body is of a higher order; and that of the two factors -- research climate and selectivity -- the latter is more critical.

3. Training Provisions

Discussions of the best means for preparing educational researchers tend to revolve around three issues: (1) the advisability of restricting the Ph.D. to research preparation and the Ed.D. to professional training, and the ancillary issue of the effect of the Ed.D. program on Ph.D. training when both degrees are offered; (2) the futility of course work and the importance of apprenticeship on projects; and (3) the advisability of having professors from the liberal arts and sciences provide research training. Our surveys permit us to explore each of these issues by reference to data on the production of "primary" researchers.

a. The Ph.D. vs the Ed.D.

In Table 7.18 we show the mean proportion of doctoral recipients entering research positions according to the type of doctoral program which is offered, which bears on the first issue mentioned above. First, it is strikingly clear that the volume of Ph.D. activity is related to production of researchers. Schools offering only the Ph.D. are most productive and schools offering only the Ed.D. are least productive. If we return to Table 7.12 on page 275, we can see that this is true only in schools which do not require professional experience as an entrance requirement. Thus, we need to qualify this finding by noting that prior exposure to schools as a practitioner reduces the connection between Ph.D. study and careers in research.

TABLE 7.18

Production of Researchers According to Proportion of Students Working on Ph.D.'s

% Working on Ph.D.'s	Mean % Doctoral Recipients Entering Research Positions
100%	9.83 (12)
31-99%	7.63 (16)
1-30%	4.13 (16)
0%	2.56 (18)

Although we did not attempt to measure the degree of differentiation between the two degree programs when they are found together, evidence from Wilder's study of reading experts[11] demonstrates that Ph.D. recipients who studied in a school which also offered the Ed.D. were less well trained for research than Ph.D. recipients who studied in a school which did not also offer the Ed.D. Table 7.19 sets forth the percentage of doctoral recipients of each type of degree in Wilder's study who valued their training, who received various types of training, and who made research a career, according to the type of degree offered by the school.

Forty-seven per cent of the Ph.D. recipients who graduated from schools offering only the Ph.D. took more than two courses in statistics, compared with 30 per cent of those who received the same degree from a school which also offered the Ed.D. (line 3a). A similar observation can be made for courses in tests and measurements --

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[11] David E. Wilder, op cit.

TABLE 7.19

Amount of Research Preparation and Experiences of Ed.D. and Ph.D. Recipients According to Graduation from Single-Degree or Mixed-Degree Schools*

	Single-Degree Schools		Mixed-Degree Schools	
Degree received:	Ed.D.	Ph.D.	Ed.D.	Ph.D.
1. How well trained in research?				
Very well	44%	46%	30%	37%
2. Was balance of training in research or teaching?				
Research	20%	42%	12%	29%
3. Courses taken:				
a. Statistics (3+)	27%	47%	27%	30%
b. Research design (3+)	20%	22%	17%	18%
c. Experimental psych. (2+)	19%	27%	16%	27%
d. Tests and measurement (3+)	28%	40%	25%	28%
4. Was ever faculty research assistant?				
Yes	18%	50%	20%	30%
5. Research training index:				
High score	39%	63%	26%	41%
6. Present research index:				
High score	39%	55%	38%	44%
Number of reading experts:	(71)	(168)	(196)	(162)

*The questions and the indices on which the figures are based are presented in Appendix G.

40 per cent in the former group took more than two courses compared with 28 per cent in the latter (line 3d). And there is even a larger percentage difference between the two groups with respect to having been a faculty research assistant, namely, 50 per cent versus 30 per cent (line 4). Although the difference is smaller, it is in the same direction with respect to current research work (line 6).

These consistent differences between Ph.D. recipients who graduated from the two types of institutions strongly suggest that the standards of the Ph.D. program in training for research are considerably relaxed as a result of association with an Ed.D. program, or more precisely, by exposure to the professional pressures which the Ed.D. program represents. And apparently this lowering of standards affects the likelihood of conducting research later on, since Ph.D. graduates from mixed-degree schools are less involved in current research than the Ph.D. graduates from schools which give only the Ph.D. In our opinion, these observations afford a very substantial basis for the recommendation that schools of education should specialize in the production of either professional educators or research scholars in order to insure that the Ph.D. program is not "watered down" by the requirements governing the Ed.D. program.

An additional piece of information can be derived from Table 7.19 which points to an interesting social psychological factor operating among Ed.D. candidates. It will be noticed that some of the measures of research preparation included in the table are objective ones, namely, courses taken and whether the experts were ever research assistants; while two other measures are chiefly subjective, namely, how well they felt they were trained and whether the balance of training in their field was for research or for teaching. Looking now at the percentages, we see that Ed.D. graduates from schools which give only this degree were about as likely as Ed.D. recipients who graduated from mixed-degree schools to have taken research courses and to have been research assistants. *Objectively*, then, the two groups of Ed.D. recipients received roughly the same amount of preparation for research. If we look at the figures corresponding to the *subjective* questions (lines 1 and 2), however, we can see that the Ed.D. recipients from mixed-degree schools were considerably *less* likely to consider themselves well prepared for doing research, and also less likely to have perceived a heavier emphasis on research preparation rather than on professional training. Thus, their subjective assessment appears to be distinctly at odds with the objective situation.

What seems to us to be a plausible explanation for this apparent contradiction is that Ed.D. candidates in mixed-degree schools *judge their own training against the training of Ph.D. candidates* with whom they are associated in many of their classes. In comparison with the Ph.D. program, therefore, they feel less adequately prepared for conducting research. In short, it seems that the two groups of Ed.D. recipients have different *standards* according to which they judge their own preparation. But in this matter of comparative judgments, there is one further point that deserves attention.

We have already noted that the Ph.D. program in mixed-degree schools appears to be less extensively devoted to research preparation than the same program in schools which grant only the Ph.D. What remains to be mentioned is that the Ph.D. program in these mixed-degree schools seems to depart *only slightly* from the Ed.D. program -- judging, that is, from the types of training which the two groups received. Only with respect to courses in experimental psychology (line 3c) and to having been a research assistant (line 4) do we find noticeable differences. It would appear, therefore, that Ed.D. graduates from these schools give more credit to the Ph.D. program -- as reflected in their comparative judgments of their research training -- than is justified by the actual content of that program. Perhaps the sheer prestige of the Ph.D. degree is responsible for this apparent overvaluation of the degree on the part of Ed.D. candidates. These conclusions are admittedly somewhat speculative, but they point to some interesting directions for future studies of the value climates of schools of education.

To summarize, it seems that when the Ph.D. and Ed.D. are both offered, the candidates in each program are affected by the presence of the other program. In the case of the Ph.D. program, there seems to be a relaxation of standards almost to the level of the Ed.D. program. In the case of Ed.D. candidates, there seems to have arisen a sense of inferiority concerning the quality of their preparation for research which is generated by comparison with a Ph.D. program which seems to be only slightly better than their own.

While the differentiation between degrees was not measured in our survey of schools of education, we asked the deans whether they agreed with the statement that "the Ph.D. should be a research degree and the Ed.D. should be a professional degree." Their replies should reflect administrative realities. And it is interesting that deans with larger proportions of Ph.D. candidates tend to agree with this statement, while deans with smaller proportions of Ph.D. candidates tend to disagree. Table 7.20 makes this clear.

TABLE 7.20

Proportion of Deans Who Agree that the Ph.D. and Ed.D. Should be Specialized Degrees, According to Proportion of Ph.D. Candidates
(schools which offer both degrees only)

	% Ph.D. of Doctoral Candidates	
	High (31-99%)	Low (1-30%)
"The Ph.D. should be a research degree and the Ed.D. should be a professional degree"		
Strongly agree	21%	8%
Mostly agree	50	39
Mostly disagree	29	46
Strongly disagree	-	8
	100%	101%
	(13)	(14)

Apparently, where greater importance is attached to scholarly training (as measured by the volume of Ph.D. activity), the deans are more anxious to protect the integrity of the Ph.D. program. And of greater interest, it appears that only in schools where Ph.D. activity is high is it possible for the dean's stand on this issue to be translated into institutional policy. For only in these circumstances do we find a relationship between the dean's belief that the two programs should be differentiated and production of researchers. In schools with a smaller proportion of doctoral candidates working on Ph.D.'s, the dean's endorsement of specialization is unrelated to the production of researchers. These facts can be seen in Table 7.21 (which includes only schools which give both degrees).

TABLE 7.21

Production of Researchers According to Volume of Ph.D. Activity and Dean's Attitude toward Differentiation of the Two Degrees
(in schools which give both degrees)

	% Ph.D. of Doctoral Candidates	
	High (31-99%)	Low (1-30%)
"The Ph.D. should be a research degree and the Ed.D. should be a professional degree"		
Agree	10.18 (11)	2.71 (7)
Disagree	2.50 (4)	5.20 (5)

These results once again suggest the influence of the Ed.D. program on Ph.D. training, and especially when the number of Ed.D. candidates exceeds the number of Ph.D. candidates. For only when the institution is highly committed to the production of Ph.D.'s does it appear that the two programs are sufficiently differentiated to eventuate in research careers.

Course work vs. Apprenticeship on Projects

The second major issue concerning training provisions that has been raised concerns the futility of preparing for research solely through course work and the relatively greater importance of gaining research experience on projects. Before examining the output of researchers according to the opportunities for course work and for internships on projects, we need to indicate the kinds of courses which were included in our definition of "course work for research." The kinds of courses which are offered and the frequency with which they occur are also indicative of institutional emphases.[12]

Our method of identifying course offerings was as follows. The most recent catalogues of the 111 schools or departments of education which grant a doctorate (1963-64) were examined to determine: (1) the proportion of all graduate courses which dealt with research techniques and problems; (2) the types of courses which these represented; (3) the division under which these courses were listed. Some margin of error in our identification of courses which are intended to prepare students to do research is to be expected since several catalogues did not provide course descriptions. In these cases we counted a course as providing research training only if its title clearly implied this objective. In cases where the objectives of the course were spelled out, we read each statement to determine whether at least some part of the course was intended expressly to prepare students to do empirical research. (If the course was only partly devoted to this task, it was counted as one-half.) With the more detailed catalogues, therefore, there may have been some over-estimation of the number of research courses.

When we look at the distribution of courses it will become clear what types of courses were included in our tabulation. But since there are a number of borderline courses offered in schools of education, it might also be helpful if we stated what we did not include. We did not count "individual testing," "test interpretation," or "test construction" as research courses, unless they were described as being useful for training in conducting general empirical studies rather than for diagnostic purposes in the classroom or in the clinical situation. Also excluded were the listings "individual study" and "thesis seminars," since these offerings are supplemental to the writing of theses, are provided by almost all schools, and are often devoid of faculty supervision.

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[12] For a parallel study of school catalogues which used a slightly different set of categories, see Krathwohl, David R., "Current Formal Patterns of Educating Empirically Oriented Researchers and Methodologists," in The Training and Nurture of Educational Researchers, Sixth Annual Phi Delta Kappa Symposium on Educational Research, Guba, Egon, ed., Bloomington: Phi Delta Kappa, 1965, pp. 73-93.

Courses which purported to "survey" the results of research in particular fields were also omitted. Although it is likely that methodological issues are sometimes raised in such courses, their objective is to summarize the research which might be useful to future practitioners, rather than to prepare the student to carry out his own investigations. Finally, we excluded courses in "school survey" methods, unless the course description mentioned the potential contribution of school surveys to general knowledge or to the development of techniques which are applicable to analytical research. For example, field survey courses which were intended to train students in the use of systematic measures of school quality were included.

There was one borderline course which we decided to count as providing research training. This was the course which sought to delineate topics on which research was needed. It was included because it seemed to be quite suitable for the student who was planning to undertake his own research.[13]

All except one of the 111 schools give courses which are intended to prepare students to carry out their own research. Table 6.22 shows (a) the proportion of schools offering at least one of the courses which are listed, (b) the proportion of total courses which are of each type, and (c) the mean number of courses of each type per school.

TABLE 6,22

Types of Research Courses Offered by
110 Schools or Departments of Education
which Grant the Doctorate (1963-64)

Type of Course	(a) Schools	(b) Courses	(c) Mean No. of Courses per School
Methods, design	96%	47%	4.6
Statistics	85	27	3.0
Testing and Measurement	71	15	2.0
Needed Research	22	5	2.2
School surveys (which contribute to research)	16	3	1.5
All others	14	4	2.7
	304%	99%	
Number of schools and courses:	(110)	(1049)	

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[13] Summer school courses were omitted because many schools of education provide special curricula during the summer due to the influx of teachers. Courses which were given more than once during the regular school year were counted as often as they were offered. A two or three semester course was counted separately for each semester rather than only once.

Virtually all of the schools offering courses in research give at least one course on "basic methods and design," and about four and a half such courses are offered per school. "Statistics" is the next most frequent offering; and although it may seem surprising that not all of the schools offer such a course, most of those which did not offer statistics gave at least one course in "testing and measurement." Thus, statistical procedures of one kind or another are also taught in almost all of the schools. Finally, Table 7.22 shows that only about a fifth of the schools give at least one course in "needed research," and that even a smaller proportion of schools deal with traditional research procedures or with the implications for general knowledge about schools in courses on "school surveys." (It should be remembered, however, that our tabulation of school survey courses was based upon our interpretation of the course descriptions.)

Taking the 110 schools together, we find that an average of 9.5 courses in research are being offered per school. According to our tabulation, these courses represent 6 per cent of all the courses offered in graduate schools or departments of education in the United States.[14]

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[14] It would be wrong, however, to interpret these figures as signifying that a graduate student in the "average" school of education has an opportunity to take nine research courses, for in the great majority of schools these courses are scattered throughout several departments and are therefore specialized by field of concentration. Thus, due to the departmentalization of graduate schools, a student's opportunity to study research methods is much more restricted than might be suggested by our figures.

In some schools, considerable effort has gone into the development of a coordinated program within divisions for students who are seriously interested in pursuing a research career. According to our tabulation, however, only a minority of the schools or departments have established divisions for research training (27%). Table 7.23 lists the various types of divisions which are responsible for research training, and the proportion of schools with each type.

TABLE 7.23

Proportion of Schools with Various Types of Research Divisions

Title of Division	
Research	12%
Testing and Measurement or Evaluation	9
Research and Measurement or Testing	4
Research, Statistics, and Measurement	2
Statistics and Measurement	1
Statistics and Research	1
Research and Administration	1
No Special Division	73
	103%*
Number of Schools:	(110)

*Exceeds 100% because three schools have two divisions each.

Since most of the schools have not set up separate divisions for courses that provide training in research, it is necessary to look at the departments or divisions in which such courses are found.

In tabulating course offerings according to departments, we decided to confine ourselves to courses which were concerned with general techniques and design of research, which we have here simply called "methods" courses. Other types were not considered because, in the first place, several are associated with particular departments--for example, testing and measurement courses are principally found in departments of educational psychology, and school survey courses in departments of educational administration. By restricting ourselves to a count of "research methods" courses, therefore, we are less likely to overestimate the frequency of research offerings in certain departments while underestimating it in others. Further, "methods" denotes the broadest kind of research training, and may therefore be considered equally relevant to all fields. And finally, since a "methods" course is the most common type of research course (with 96 per cent of the schools offering at least one, and the average school offering about four such courses), this restriction does not reduce the representativeness of the schools.

Table 7.24 shows the dispersion of these courses throughout a variety of departments. Only 12 per cent of the courses on research methods are located in a special section for research. Fourteen per cent were found to be scattered throughout about a dozen different curriculum and teaching departments. Psychology and guidance were found to have the next largest proportions of all methods courses (12 per cent and 10 per cent, respectively).

TABLE 7.24

Proportion of "Research Methods" Courses Found in Various Divisions of 106 Graduate Schools of Education, 1963-64

Division	% of All "Research Methods" Courses
Research, Statistics, etc.	12%
Educational psychology	12
Guidance and counseling	10
Social science, history, philosophy	9
Physical education	6
Educational administration	5
Elementary education	3
Secondary education	1
All other C & T departments	10
All other departments (e.g., educational services, audio-visual, special education)	6
Combinations of above	4
Workshops, advanced graduate courses, seminars	9
No sub-divisions in school	13
	100%
Total "methods" courses:	(488)

In the larger schools, moreover, it was not uncommon to find a methods course being offered in each of several divisions within the school. For example, a public university in the southwest offers "research methods in human behavior" under educational psychology, "methodologies of research" under history and philosophy of education (including social science courses), "research methodologies" under physical and health education, and several sections of "directed research in education" under a division entitled simply education. Similarly, a public university in the midwest gives a course in "methods in educational research" under educational psychology, another in "research methods" under home economics, another in "recent research and literature" under music education, and another in "research in physical education and recreation" under physical education. Examples such as these could be multiplied.

If the school is not very large, it is not unusual for courses on research methods to be offered in various subject-matter fields rather than in different departments. For example, a smaller midwestern public university offers a research course in social studies, in arithmetic, in language arts, in reading, and in science, all within the division of elementary education.

It is not clear why these courses are so scattered, since it is difficult to believe that each field or department is cultivating a distinctive approach to research on human behavior. Perhaps this dispersion reflects the barriers between divisions which have resulted from specializations within the program of teacher preparation. If research training is to be provided, the assumption is that it must be fitted into the existing departmental system. Or, the dispersion of courses might be a token of the prestige to be gained from offering a research course within one's own specialty. But whatever the explanation, the scattering of courses among many departments signifies that a coordinated program for training in research is an uncommon occurrence.

This lack of coordination would seem to have several drawbacks. First, it means that a professor who is narrowly specialized in a particular field will be responsible for training future researchers. Not only does this mean that his view of research methodology and topics may be extremely limited, but that his interest in research will be secondary to his professional obligations to the field. Second, the dispersion of research courses among professional departments means that students will regard training in research as a minor feature of their chosen field of concentration, rather than as a field of concentration in its own right. Third, and probably most important, it means that an integrated program which carries the student through the various stages of research preparation over a period of several semesters is not practicable, since the personnel who might be qualified to contribute to such a program are busy teaching introductory courses in the separate departments.

In short, the dispersion of research methods courses militates against a more or less vertical organization of the curriculum in a separate division. It therefore fails to take advantage of the special qualifications of certain faculty members, and fails too to satisfy the need for broader training of doctoral students who might be interested in research as a career. The production of dilettantes rather than of experts might be the consequence.

Before leaving Table 6.24 it is worth noting that the same number of courses were offered under educational psychology as under a separate section for research, statistics, and so forth (12% of all courses were offered under each of these headings). By contrast, only

9 per cent of all methods courses were offered in all of the social science departments combined. (Only 1 per cent were offered under sociology of education specifically.) Here once again we confront the preoccupation of educational research with psychological approaches. Finally, it is somewhat puzzling that physical education offers 6 per cent of all the courses in research methods, although in 1957 only 2 per cent of the doctorates were awarded in this field.[15]

Now, let us return to the question of whether schools which offer more research courses produce more researchers.

Table 6.25 sets forth the production of researchers according to varying amounts of course work available for research training. In brief, it becomes obvious from Table 7.25 that the availability of research courses in schools of education is unrelated to the production of researchers. The amount of course work required outside of education, however, is slightly associated with productivity (Table 7.25, line 4). The question on which this latter statistic is based was as follows:

> Are any of the courses which are required for doctoral students of education offered only in a department outside the school or department of education? (IF YES): Which departments?

To obtain an index of the extent to which non-education courses were required, we simply summed the number of departments outside education which were mentioned. But even in the case of non-education courses, the relationship with productivity is weak. (Not even in the highly select schools do we find a relationship between opportunities for course work in education and production of researchers.) In brief, opportunities for course work on research do not seem to promote the adoption of research as a career.

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[15] The Doctorate in Education, Vol. 2; Washington, D. C.: The American Association of Colleges for Teacher Education, 1960; p. 69.

We asked the respondents about the extent of internship on projects, also. First, we ascertained the number of team and of individual projects outside a research bureau, and then asked how many of these projects had "students as assistants, using material for dissertations, etc."

TABLE 7,25

Production of Researchers According to Availability of Research Courses in Education, and Requirements Outside of Education

	Mean % doctoral recipients entering research positions
1. Proportion of education courses devoted to research methods	
High (8-24%)	6.37 (19)
Med. (6-7%)	4.75 (20)
Low (0-5%)	5.96 (27)
2. Proportion of all graduate education courses which are devoted to research methods and have entrance requirements (prerequisites or permission of instructor)	
High (3.1%+)	5.00 (22)
Med. (1.1-3%)	5.96 (26)
Low (0-1%)	6.22 (18)
3. Proportion of research courses in education which have entrance requirements (prerequisites or permission of instructor)	
High (51%+)	5.75 (20)
Med. high (33-50%)	6.29 (17)
Med. low (1-32%)	5.18 (17)
Low (0%)	5.58 (12)
4. Course work required outside of education (no. of departments offering required courses)	
High (7+)	8.09 (11)
Med. (1-6)	4.85 (26)
Low (0)	5.00 (18)

As shown in Table 7.26, the larger the proportion of students working on projects (outside of bureaus), the greater the output of researchers. This result depends largely on a high level of apprenticeship, however (3%+).

TABLE 7.26

Production of Researchers According to Apprenticeship on Faculty Projects Outside of Bureaus

Apprenticeship (% Students on projects outside of bureaus)	Mean % doctoral recipients entering research positions
High (3%+)	6.95 (21)
Med. (1-2%)	4.00 (17)
Low (0%)	3.43 (23)

Further, this relationship is apparently confined to schools with more highly select student bodies, as seen in Table 7.27 (Section 1). (It should be noted, however, that selectivity is related to the production of researchers regardless of the amount of apprenticeship.)

With respect to the effect of research climate as measured by the "quality of research" produced by the faculty, Table 6.27 (Section 2) suggests that production of researchers is associated with opportunities for apprenticeship regardless of whether the school was named as doing the "best research"; and that productivity is also related to research quality regardless of the level of apprenticeship.

TABLE 7.27

Production of Researchers and Apprenticeship According to Selectivity, Research Quality, and Emphasis on Research Training

	Apprenticeship		
	High (3%+)	*Low* (0-2%)	*Diff.*
1. *Selectivity*			
High	11.30 (10)	6.28 (14)	+5.02
Low	3.57 (7)	2.88 (16)	+0.69
2. *Research Quality Index*			
Best	15.00 (14)	8.25 (4)	+6.75
Other	5.67 (15)	2.62 (29)	+3.05
3. *Emphasis on Research Training*			
a. *Type of preparation emphasized*			
Research	9.28 (7)	3.28 (7)	+6.00
Other	6.43 (14)	4.42 (26)	+2.01
b. *Research Training Program*			
Program exists (Yes	11.50 (4)	2.67 (3)	+8.83
(No, except doctoral program	12.60 (5)	5.12 (8)	+7.48
No program	3.60 (10)	3.90 (21)	-0.30

But when we consider the institution's *emphasis* on research training, it appears that *productivity and apprenticeship are related only when research training is emphasized* (Table 7.27, 3a and 3b). This conclusion also applies to the condition of a more highly select student body; but of the two conditions, a training program seems to be the more important. These findings draw attention to the importance of institutional policies which insure that apprenticeship is a meaningful experience in preparing students to do independent work. In short, it seems that *apprenticeship alone does not automatically* *guarantee that students are sufficiently prepared or motivated to pursue research careers*. Both talent and institutional nurturance are necessary to reap the benefits of apprenticeship. And also noteworthy in Table 7.27 is the dependence of a training program (3b) on the effect of opportunities for apprenticeship, for *when apprenticeships are not provided, production of researchers is not associated with the existence of a training program*.

Finally, it should not be lost sight of that *opportunities for apprenticeship on projects is more likely to eventuate in research careers than opportunities for course work in research methods*.

c. *Interdisciplinary Training*

A third major issue related to the improvement of research training concerns the advisability of receiving instruction from scholars in the liberal arts and sciences. We have already seen that the production of researchers is slightly related to the amount of required course work *outside* of education (as measured by the number of outside departments offering courses required for the doctorate), although it is not related to the existence of research courses *within* education. And earlier we saw that the production of researchers was related to the Index of Interdisciplinary Relationships, although this was true only among schools with highly select student bodies. In this section we shall examine an additional measure of the extent of training received from persons prepared in the liberal arts and sciences.

But first, it is worth noting that *seven out of ten deans do not believe that students in education should receive most of their training for research outside the school of education*. Table 7.28 shows the reactions of the deans to the following statement:

> Persons who wish to make a career of educational research should receive most of their training from professors in the behavioral sciences outside schools of education.

TABLE 7.28

Agreement of Deans with Statement on Advisability of Outside Training in Research

Students should receive most of their research training outside of education	
Strongly agree	3%
Mostly agree	13
Undecided	15
Mostly disagree	51
Strongly disagree	18
	100%
	(68)

Admittedly, the statement was couched in rather extreme terms, and it is quite likely that many deans feel that at least some portion of research training should be provided by the liberal arts departments. But on the whole, it is clear that deans are not presently prepared to relinquish research training entirely to these departments.

One alternative to sending students outside the school of education is to bring liberal arts and science professors to the students, that is, to recruit professors on the education faculty who received most of their advanced training outside of education. (On the average, about 19% of the education faculty per school is composed of persons who received most of their training for their highest degrees outside of a school or department of education.) Table 7.29, however, reveals that productivity of researchers is not related to the proportion of the education faculty trained outside of education.

TABLE 7.29

Production of Researchers According to Proportion of Education Faculty Trained Mostly Outside of Education

Interdisciplinary Faculty (% trained outside education)	Mean % Doctoral Recipients Entering Research	
High (21%+)	6.69	(16)
Med. high (11-20%)	6.21	(14)
Med. low (1-10%)	7.00	(12)
Low (0%)	3.59	(22)

But if we examine this relationship according to selectivity, research quality, and emphasis on research training, it becomes clear that output of researchers is associated with interdisciplinary training among the better, more select, more research-oriented schools. Table 7.30 summarizes the pertinent findings. Thus, our results with respect to interdisciplinary training are similar to our observations concerning apprenticeship on projects where selectivity, research climate, and a training program were likewise found to be necessary conditions. And once again, it is the existence of a training program which appears to be most important in determining the effect of an interdisciplinary faculty.

Since an interdisciplinary faculty and research apprenticeships are related, it is possible that our findings with respect to each of these two variables are not independent of one another. The small number of cases that results from more detailed analysis makes it almost impossible to study the relationship of these two features of a training environment to production of researchers independently of one another, while also controlling for selectivity and research

TABLE 7.30

Production of Researchers and Interdisciplinary Faculty According to Selectivity, Research Quality, and Emphasis on Research Training

	Interdisciplinary Faculty		
	High (11%+)	Low (0-10%)	Diff.
1. Selectivity			
High	12.17 (12)	7.13 (15)	+5.04
Low	3.00 (13)	3.22 (9)	-0.22
2. Research Quality Index			
Best	14.43 (7)	10.00 (3)	+4.43
Other	4.23 (22)	4.27 (22)	-0.04
3. Emphasis on Research Training			
a. Preparation emphasized			
Research	7.82 (11)	6.33 (6)	+1.49
Other	5.40 (20)	5.40 (20)	0.00
b. Research Training Program			
Program exists (Special Program	10.20 (5)	2.00 (2)	+8.20
Program exists (Doctoral Program	16.20 (5)	5.36 (11)	+10.84
No program	3.00 (19)	5.40 (10)	-2.40

climate. However, we can at least see if one variable is more critical than the other without these controls.

TABLE 7.31

Production of Researchers According to Interdisciplinary Faculty and Apprenticeships

Apprenticeships (% of students working on faculty projects outside of bureaus)	Interdisciplinary Faculty High (11%+)	 Low (0-10%)	Diff.
High (3%+)	9.42 (12)	4.57 (7)	+4.85
Low (0-2%)	2.50 (14)	5.76 (17)	
Diff. (high vs low)	+6.92	-1.19	

Table 7.31 shows that the two variables are about equally important, providing each occurs in the presence of the other. In the absence of an interdisciplinary faculty, apprenticeships are not positively related to production of researchers, and vice versa. But we need to go further in our examination of how these two variables interact, for Table 7.31 suggests that in the absence of apprenticeship, the existence of an interdisciplinary faculty is *negatively* related to production of researchers. Since this result might well be due to uncontrolled factors associated with either of the two variables, it is fortunate that we are able to provide an independent test of this finding. If we substitute for the proportion of education faculty members trained in other fields the requirement that doctoral candidates *take courses outside the school of education* (which variables are only slightly related to one another), we find almost exactly the same relationships. Table 7.32 summarizes these results.

TABLE 7.32

Production of Researchers According to Requirement of Courses Outside Education and Apprenticeships

Apprenticeships (% of students working on faculty projects)	Courses required outside education		Diff.
	Yes	No	
High (3%+)	6.80 (15)	2.40 (5)	+4.40
Low (0-2%)	3.00 (20)	6.17 (12)	-3.17
Diff. (high vs low)	+3.18	-3.67	

By comparing the *differences* between the productivity means shown in Tables 7.31 and 7.32, we find striking similarities. In both tables, *exposure to an interdisciplinary faculty is negatively related to the production of researchers when the level of apprenticeship is low*. (Identical results are obtained when we use the Index of Interdisciplinary Relationships, or the number of joint arrangements between education and other departments, as a measure of interdisciplinary exposure. But since this index is not independent of the requirement of courses outside education, we do not show these results here.)

Perhaps the explanation for these findings resides in the *type* of non-education faculty associated with schools of education which do not stress research. Non-education personnel who are associated with schools which do not emphasize research might be subject matter specialists who emphasize teacher training.[16] Their presence in non-research schools may simply reflect a level of concern with research training which is even lower than usual; hence, the negative relationship between interdisciplinary exposure and production of researchers in non-research training schools.

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[16] We are indebted to Julian Stanley for suggesting this explanation.

The fact that opportunities for apprenticeship are related to production of researchers only when there is a high level of interdisciplinary exposure suggests that apprenticeship on projects conducted by the education-trained faculty is not as rewarding as apprenticeship with faculty members from other disciplines. This interpretation is conjectural, however, since we did not gather information about the discipline of the researcher with whom students are working. At any rate, the necessity of combining the best elements of a research training environment in order to maximize the production of researchers is once again strongly indicated. No single-factor theory of institutional inputs is adequate to account for the production of researchers.

So far we have confined attention to training provisions outside of bureaus. In the following section we shall examine the situation which prevails inside the bureaus.

D. Research Training in Bureaus

1. An Overview

The great majority of educational research units (86%) have graduate students working on projects or associated with them in some other role. But systematic programs for research training are found much less frequently. Table 7.33 shows the proportion of bureaus with three kinds of arrangements. Only 37% of the bureaus shift students among projects in order to match their needs and abilities with particular research opportunities. About the same proportion only hire students for particular jobs which, when completed, leave the students without further employment.

TABLE 7.33

Proportion of Research Bureaus with Various Training Arrangements

Which of the following statements is most applicable to your unit?

There is a training program, allowing students to be moved from project to project as best suits their abilities and needs.	37%
Although there is no training program, students manage to get around to various projects.	29
Students are hired to do specific tasks and tend to leave the unit as soon as their job is completed.	35
	101%
Bureaus with students:	(55)

Seminars and courses in methods of research are more common than formal apprenticeship programs, however, for almost half of the bureaus (47%) seek to prepare researchers through these means.[17] Further, seminars are much more common than courses (42% and 13% of the bureaus, respectively). The topics of courses and seminars seem to fall into several distinct categories, according to the descriptions which we solicited from the directors: (1) general reviews of educational research methods and results in several fields; (2) specialized techniques of designing studies and processing data, e.g., experimental methods or computer technology; (3) research related to a special field; and (4) the on-going research of the unit.

Although in most cases credit towards the degree is given for attendance (62% of the bureaus with courses or seminars offer credit), only in a minority of cases (31%) are special funds provided either for courses or seminars or for a training program. This latter figure means that only 15 per cent of all the bureaus in our study have special training funds. Further, the funds which are provided are nominal in amount, namely, $26,000 on the average. Thus, only about $200,000 is earmarked for training programs in all bureaus of educational research, a sum which is quite low when one considers the opportunities existing in these units for preparing educational researchers. Let us now see what opportunities in fact exist.

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[17] This percentage and those immediately following refer only to the fifty-five bureaus with students.

On the average, there are 7.8 doctoral students per bureau working on projects, or a projected total of 429 doctoral students in 55 bureaus. And many students use the data or facilities of the bureaus for preparing their dissertations, namely, 9 doctoral candidates per bureau. Thus, it is obvious that apprenticeship on projects and dissertation work are fairly widespread. Fifty-one per cent of all bureau projects have doctoral students as assistants. (The average number of students per project is 1.9 in the fifty bureaus which replied to the two questions necessary for computing this statistic).

As a matter of fact, bureau projects are more likely to provide internship experiences for students than projects outside of bureaus. This is shown by the fact that 51 per cent of all bureau projects have "doctoral students" working with them, either as assistants or using materials for theses; while 42 per cent of all projects outside of bureaus in the same schools have "students" working with them.[18] If we compute the mean proportion of projects with students per setting, the difference is even larger. A mean proportion of 69 per cent of the projects per bureau have doctoral students working with them, compared with a mean proportion of 37 per cent of the projects in the same schools outside of bureaus. The differential opportunity for internships inside and outside of bureaus may be due to the larger magnitude of bureau projects (referred to earlier), and perhaps also to the greater visibility of bureaus as research environments.

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[18] We inadvertently asked the question of deans or coordinators and of unit directors in two different ways. The deans or coordinators (con't.)

It should be recognized, however, that students associated with research units enjoy a somewhat rare opportunity, for on the average only 2.4 per cent of all doctoral candidates in education per school with a bureau are working on bureau projects. This figure means that research units affect the training of only an extremely small proportion of students. This result is striking evidence of the extent of the under-utilization of bureaus for research training. When we also consider that less than a third of all the bureaus have "training programs," and that fewer than half of these bureaus have any funds for such programs, then it is amply clear that only a tiny proportion of doctoral candidates are exposed to systematic efforts on the part of research bureaus to prepare them for independent research.

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18 (con't.)

were asked about projects outside of bureaus as follows: "How many (team and individual) projects have students as assistants, working on dissertations, etc.?"; while the unit directors were asked, "How many research projects associated with your unit have doctoral students in education as assistants, using material for dissertations, etc.?" Thus, the question pertaining to bureau projects was limited to doctoral students, not just any students. This means that the percentage difference between projects with students inside and outside of bureaus is larger than that indicated above, since the question for bureaus was more restrictive.

One of the major problems, of course, is lack of funds for stipends, which will probably be remedied in large part by the new research training grants of the U.S. Office of Education. The lack of funds may account for the directors' complaints about the qualification of students who are available for research assistantships -- which brings us back to our earlier discussion of the relatively poor quality of academic talent entering graduate schools of education. The problem posed by the ability level of students is demonstrated by the directors' response to the following question:

> Have you experienced any difficulty in getting qualified students to work on projects in your unit? If so, would you briefly describe the problem.

Most of the directors with students in their bureaus claimed that such a problem existed (55%). And it is highly interesting that this complaint was more likely to be voiced by directors in the more highly selective schools. In these schools, 64 per cent of the directors averred that it was difficult to recruit qualified students to work on projects, while in the less selective schools only 25 per cent expressed this complaint. There are three possible explanations for this finding: (1) there is more competition for the abler students in better schools; (2) the better students in the better schools receive fellowships, and therefore do not make themselves available for research assistantships; (3) the directors in better schools have higher standards for judging student qualifications, while those in the poorer schools are satisfied with what they can get.

The problem of competition among different departments was mentioned by several respondents when asked why they had difficulty in recruiting qualified students:

> We have had some difficulty in attracting NDEA fellows in that other programs want the same student that we do. Thus, we will find some graduates having received two or three fellowship offers from programs like our own . . .
>
> . . . relatively few are available in education -- are in other fields too often.
>
> Education, until the last two years, just hasn't been able to attract and hold them. The amount of research we could attempt was very definitely limited by this difficulty.

A related reason for the difficulty of attracting the best students to research units is the availability of fellowships which do not entail internship on projects. As one respondent explained:

> Many doctoral students are now on fellowships instead of assistantships.

Others whom we interviewed also referred to the competition between fellowships and research assistantships, and noted that the better students receive the fellowships. One of the national leaders of research training in education ranked fellows, research assistants, and teaching assistants in order of descending quality. The implication of this state of affairs for student training is that the better students are kept out of research units which, in many schools, are the only places where they can acquire meaningful internship experience. As pressures increase for reducing the time that it takes to obtain the doctorate, the better students might be even more inclined in the future to accept fellowships which do not entail research experience apart from the thesis.

Directors in better schools probably also have higher standards for judging student qualifications. For example:

> We do not employ students as research workers who do not meet the criteria for Ph.D. candidacy in their respective departments. Even so, we have about 15 per cent of our students who are not particularly good.
>
> Always shortage of top grade.

A few directors replied in terms of the students' lack of sufficient preparation for conducting research rather than in terms of basic abilities. These responses imply that directors are sometimes more interested in recruiting students who are already proficient in carrying out research assignments, rather than in providing students with opportunities to develop such skills.

The lack of appropriate training provisions and the deficiency of able students are reflected in the relatively small proportion of doctoral recipients having worked in bureaus in the past 3 years who entered positions where research was a *primary responsibility* immediately after receiving the degree. In the 49 bureaus where the directors supplied this information, only 2.3 doctoral recipients per bureau immediately became "primary" researchers. Since there was a total of 442 doctoral recipients in the preceding three-year period and 113 who entered research, this means that *only 26% of the doctoral recipients who had worked in bureaus in the preceding three years entered positions where research was a primary responsibility*. While the percentage is considerably larger than the proportion of *all* doctoral recipients from schools of education entering "primary" research positions (6.3 per cent per school), when we remember that all of the bureaus are conducting research on education, this rate of productivity seems surprisingly low. *In 41% of the bureaus which responded, none of the doctoral recipients became "primary" researchers*.

An even more puzzling statistic is the extremely small number of doctoral recipients who *remained* in the unit after graduation. A total of 31 students in 42 bureaus of educational research where the directors replied to this question stayed on to do research there, or only .74 students per bureau. In the absence of any in-breeding whatsoever, it is hard to understand how bureaus are able to develop an intellectual tradition over several student generations. This low retention rate may go far in explaining why the programs of educational research units have been closely linked to the tenure of particular directors.

Perhaps even more significant for the development of research in schools of education as a whole is the fact that doctoral recipients from bureaus who enter positions where research is a primary task do not even remain in the universities. While 13 per cent of the doctoral recipients who worked in bureaus undertook research within universities as a primary responsibility, a total of 12 per cent entered school systems (2%), State departments (5%), and independent research agencies (5%). Thus, even those researchers who have enjoyed the rare opportunity of working in a research environment do not contribute to the preparation of a new generation of researchers. They do not teach courses, supervise dissertations, or train apprentices in the universities. Admittedly, we have confined attention to doctoral recipients who became "primary" researchers, and it is true that 33 per cent of the bureau doctoral recipients became professors in the universities. Still, the low rate of retention of persons highly committed to a research career reflects very unfavorably on the climate for research in schools of education. In short, it seems to us that the preparation of educational researchers is "short circuited" by outside agencies which apparently offer competitive opportunities for research.

The weight of the evidence thus far shows that educational research units possess opportunities for research training which are *only rarely exploited*. Whether we consider the many students who are already associated with these bureaus, but who are not exposed to formal programs, or consider the much larger number of doctoral candidates who are not even associated with bureaus, it is clear that research units in education are not fulfilling one of their most vital functions. The damage may not only be felt by individual doctoral recipients in education, but by research units and schools of education as a whole, since many of these students do not remain in the universities and very few remain in the bureaus.

2. Production of Researchers by Research Units According to Selected Organizational Features

a. Training Provisions

We have already seen that almost four out of ten bureaus have formal apprenticeship programs, that most offer courses or seminars for which credit toward the degree is usually given, but that very few have funds for a training program. The importance of these provisions for the production of "primary" researchers may be gleaned by examining the mean proportion of doctoral recipients having worked at bureaus in the past three years who entered research positions immediately after graduation.

Table 7.34 reveals that *production of researchers by bureaus is associated with having a training program (1) and (2), with the existence of seminars (3), and with the existence of funds earmarked for a training program (4)*; but not with opportunities for apprenticeship on projects (5).

TABLE 7.34

Production of Researchers by Bureaus According to Several Training Provisions
(in bureaus with students)

	Mean % doctoral recipients entering research positions	
1. Responsibility of director to provide opportunities for research training		
Yes	21.49	(45)
No	16.13	(8)
2. Type of apprenticeship program		
Students are moved among projects according to their needs and abilities	39.06	(16)
Students are hired for specific tasks then tend to leave the bureau	20.08	(13)
Students are not assigned but manage to get around to projects	11.69	(13)
3. Seminars or courses for research training		
Seminars	30.25	(20)
Courses	20.71	(7)
Neither	18.43	(21)
4. Funds for training program		
Yes	40.67	(6)
No	23.27	(30)
5. Opportunities for apprenticeship (% projects with education students)		
High (100%)	30.12	(17)
Medium (50-99%)	14.88	(8)
Low (0-49%)	26.75	(12)

The fact that bureaus tend to produce a larger proportion of researchers when directors have some responsibility for providing opportunities for students to participate in research underscores the importance of monitoring the apprenticeship program. (Almost all of the directors claimed that they had this responsibility, however.) And since units which assign students to projects according to their needs and abilities are much more likely to produce researchers than other units, it seems obvious that systematic handling of students is an important condition for the production of researchers.

The association between productivity and seminars suggests that classroom work within units promotes research careers; although earlier we saw that the availability of research courses throughout the school of education is not related to production of researchers. Incidentally, the existence of a bureau seminar for research training is related to the production of researchers regardless of whether the bureau has a training program for moving students among projects. However, systematic handling of apprentices is much more important, as can be seen in Table 7.35.

This result concerning the relative value of apprenticeships and course work reminds us of our earlier findings with respect to the school of education as a whole. There we also found that classroom opportunities were less important than apprenticeships in predicting the production of researchers. In the case of bureaus, however, it appears that seminars do have some value. The difference between course work in the bureau and non-bureau setting may flow from the availability of project directors within the research unit to conduct seminars, and also from the ready access to projects for case studies of on-going research and for data. In short, the intellectual climate in units is one which stresses research.

TABLE 7.35

Production of Researchers by Bureaus According to the Existence of a Seminar and Systematic Apprenticeship

		Systematic Apprentice Program*		Diff.
		Yes	No	
Seminar	Yes	40.89 (9)	22.38 (8)	+18.51
	No	36.71 (7)	13.76 (17)	+22.95
	Diff.	+4.18	+8.62	

Mean difference according to apprentice program: +20.73

Mean difference according to seminar: +6.40

*Bureaus which shift students among projects according to their needs and abilities were classified as having this program, i.e., "Yes."

The relationship between production of researchers and the existence of training funds, also noted in Table 7.34, indicates that even nominal funds for support of a training program may increase the production of researchers; however, more detailed analysis is needed to isolate the possible effect of funds from other features of the program.

It is difficult to explain why opportunities for apprenticeship on projects is unrelated to the production of researchers. (When we looked only at research-oriented units, we still did not find a relationship.) One possible explanation is that in order for apprenticeships to eventuate in research careers, some form of monitoring is necessary; but the possible benefits of such a program may be dissipated if the number of students involved exceeds a certain point. Thus, the greatest productivity may issue from programs having a manageable number of students to cope with, while programs with more students may tend to spread their efforts too thinly. In other words, there may be a point of diminishing returns as any single program grows in size. Table 7.36 lends support to this supposition.

TABLE 7.36

Production of Researchers by Bureaus According to Proportion of Projects with Students and the Existence of a Program for Systematic Apprenticeship

			Systematic Apprenticeship Program*	
			Yes	No
Proportion of Projects with Students	High	(67%+)	37.33 (9)	21.82 (11)
	Low	(0-66%)	60.00 (4)	8.67 (9)

*Bureaus which shift students among projects according to their needs and abilities were classified as having this program.

In the first place, we see that apprentice programs are more productive of researchers regardless of the volume of apprentices. However, programs with a low volume of apprentices to handle are considerably more productive than programs with a high volume of apprentices. On the other hand, when no program exists, the greater the opportunities for apprenticeship, the greater the production of researchers.

In sum, it would appear that the type of programs which have existed in the past are most suitable for handling small numbers of students, that is, if we can regard the output of "primary" researchers as a criterion of the effectiveness of these programs. This consideration may account for the absence of a relationship between volume of apprenticeships and production of researchers overall.

b. Integration with teaching departments in education

Research organizations located in the universities are faced with a basic dilemma with regard to training. On the one hand, they must produce significant work by maintaining a high level of professional competence. The most obvious way to attain this goal is to engage a staff of professional researchers and set them to work in an environment where they may be insulated from the duties and pressures associated with the teaching departments, and where they can be assured of a steady supply of research technicians working on fixed time schedules. This arrangement characterizes a model of radical autonomy from the teaching departments. On the other hand, research units afford unique opportunities for training a new generation of empirically oriented scholars; and by virtue of their location in the university, they have an obligation to help prepare researchers. One way of serving this goal is to make the bureau a research training arm of a teaching department. An arrangement of this nature, which would only secondarily be devoted to research on the frontiers of a discipline, characterizes the model of radical integration with the teaching departments.

It is by no means obvious which of these models is more successful in encouraging and training students for research careers, and the answer may depend to a large degree on the level of scholarly commitment which typifies the discipline. The autonomous, high-level staff organization is more likely to provide employment on major projects under the supervision of outstanding researchers, even though the needs of students may not specifically receive attention. The integrated type of arrangement, also runs the risk of making research appear as a remote activity to students. Even when they work on faculty projects, their supervisors might be only marginally committed if they are heavily involved in classroom and administrative assignments in the teaching departments. Yet this latter arrangement is less likely to exploit students as hourly laborers, and more likely to give them opportunities for advice, encouragement, and assignments at higher levels, such as writing up the results of their own analysis. In short, something can be said for and against each model.

Before exploring the production of researchers by bureaus with varying degrees of integration into the teaching departments, let us consider two examples of the models we have mentioned. Both of these training models have students working on the projects of senior staff or faculty members. Representing the arrangement of staff researchers which is independent of any particular department and which lacks a training program, we have selected one of the Research and Development Centers as it operated two years ago. For the model which is closely allied with a department and which is almost wholly devoted to research training, we have chosen the Laboratory of Experimental Design, University of Wisconsin.

> The current goal of the Laboratory of Experimental Design is to produce three to five doctoral recipients a year who are "young, able, well-prepared, research-oriented persons" in educational psychology. As described in a recent report by the Director, the Laboratory is:
>
> > "a faculty for assisting graduate students with strong quantitative interests and ability to obtain Ph.D. degrees in educational psychology quickly while learning how to consult with educational researchers about their experimentation and to collaborate actively with them. It is a laboratory within the Department of Educational Psychology, drawing on the resources of that department and of other departments within the University, especially Statistics, Mathematics, and Psychology. Each LEDer is

> urged, but not required, to take at least two semesters of calculus-prerequisite mathematical statistics at the Mood-Graybill level, one semester of probability theory, and one semester of matrix theory, besides an array of courses or the equivalents thereof in measurement and applied statistics."[17]

The Laboratory began operations in 1961 with four three-year NDEA Title IV Fellows, four research assistants, and two professors. And it is pertinent to the issue of developing commitment through experiences on projects that only one of the NDEA first four fellows continued on to receive the Ph.D., while two of the research assistants achieved this goal and a third assistant attained the M.S. degree. As the director puts it, the first research assistants were "more durable" than the first fellows. According to the director's appraisal, commitment was an important factor in the loss of the NDEA fellows:

> "Three of the first four NDEA fellows proved to have little motivation to work for a Ph.D. degree with heavy emphasis on mathematical statistics, mathematics, and helping others to perform educational experiments."[18]

The remedy which was adopted was more careful screening of subsequent NDEA fellows, although other changes in the Laboratory probably also contributed to greater effectiveness of the program in the ensuing years.

The Laboratory now affords a training program which allows students to be moved among projects as best suits their abilities and needs, a weekly seminar for students, staff, and non-staff faculty members, and training funds amounting to $14,000 during the year of our survey. In the future the director would like to de-emphasize coursework and promote more independent work on the part of students, suggesting that the Laboratory recognizes a need to move further towards research experience as a means of training (from the questionnaire).

Finally, the Laboratory is not only a program within the Department of Educational Psychology, but most of the senior researchers associated with the unit are faculty rather than staff members. Thus, it is a facilitating agency rather than a programmatic one.

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[17] Julian Stanley, op. cit.

[18] Ibid.

The research and development centers recently funded by the U.S. Office of Education afford examples of the training model which provides research experience on staff projects within units which are formally independent of teaching departments (information refers to 1964):

> The Learning Research and Development Center, University of Pittsburgh, has graduate students working with all its projects conducted by staff members, representing about 10 per cent of the doctoral students in the school of education. In addition, there are six students from other departments in the university. Unlike the Laboratory at Wisconsin, however, students are hired to do specific tasks and tend to leave the unit when their jobs are completed. Some of the students see their work at the Center as an essential contribution to their graduate training; others are working primarily for the money they can earn. Although seminars are conducted, no funds are earmarked for a training program.
>
> Despite the absence of a formal training program, two of the four doctoral recipients who had worked at the Center during the two years of its existence entered positions where research was a primary responsibility after receiving the degree. It was the director's hope that a formal training program could be inaugurated in the future.

To the best of our knowledge, the situation described above characterized the other research and development centers which were founded earliest. A possible exception is the Research and Development Center for Learning and Re-education, University of Wisconsin.

> It is clear from the proposal for the Wisconsin R & D Center that training of researchers was considered as an important by-product of apprenticeship on projects: "Post-doctoral associates and pre-doctoral students will receive excellent experience and education at the Center. This will increase the supply of high-quality research workers substantially .
>
> At the time of our survey, 16 doctoral students in education were working with projects of the staff. About half of these students were preparing dissertations on the basis of the Center's work. In addition, there were nine doctoral students from outside education representing political science, physical and biological sciences, psychology, mathematics, speech, and journalism. The Center provides stipends of $2250 for half-time project and research assistants with a remission of $700 for tuition. Furthermore,

> staff members of the unit conduct weekly seminars on research techniques and results in concept learning, problem solving, and curriculum development in mathematics, science and English. Credit towards a degree is given for participation in these seminars. (The Center is too young to determine the production of "primary" researchers among doctoral recipients.)

The problems that are created for graduate students working at autonomous, project-oriented research units which lack a training program are exemplified in the case of one of the units covered in our study. According to a field study of the unit conducted several years ago, the twelve research assistants who were interviewed tended to feel that their work at the unit had been unrewarding. As the field report commented, "There is an inverse relationship between length of service and positive feelings towards the bureau." While the assistants were primarily engaged for research tasks of a clerical nature, the frequent absence of project directors from the unit forced them to assume responsibilities for which they were poorly prepared. Further, when the assistants demonstrated their grasp of routine research procedures, there was little opportunity for advancement to more complex tasks. As the field report pointed out:

> Many assistants who have had experience with the bureau felt that this additional experience, as well as additional graduate training, ought to be recognized not so much in terms of money but rather in terms of status or promotion to a level above that of a research assistant. It was the further feeling of this group that as the research assignment became more complex and carried greater responsibility the assistant should be compensated by a staff position equivalent to it. At the other extreme of this concept many assistants were somewhat disgruntled that they were overburdened with routine clerical duties. (Some comments of the assistants were) "bureau staff expected me to do too much repetitive clerical work," "job is dull routine . . . not research"; "at times work becomes dull and unrewarding."

The high degree of concentration on isolated staff projects, together with the extreme autonomy which characterized this bureau, seems to have promoted a single-minded preoccupation with producing professional reports on schedule.

Orienting students to the project and teaching them to perform the more advanced functions of research is definitely time-consuming, since their work must be carefully reviewed, corrected, and explained. Within the context of the autonomous type of bureau, systematic training of students may be viewed as impeding the attainment of organizational goals. We shall now turn to our survey data to see if we can determine the relationship between integration of the unit with the teaching department, on the one hand, and (a) opportunities for training and (b) production of researchers, on the other.

Thus far our scale of "integration" with the teaching departments has been rather uncomplicated. Now we shall have to complicate matters by noting that there are two distinct ways in which bureaus may be "integrated" into the larger institutional structure: (1) through affiliation with a particular department, program, or division within the school of education, and (2) through the facilitation of the research of non-staff faculty. (These dimensions were discussed in Chapter IV.) One reason for emphasizing this distinction is because these two types of integration tend to be mutually exclusive. Table 7.37 shows that bureaus which facilitate faculty members in their research endeavors are less likely to be affiliated with a particular department in the school of education.

TABLE 7.37

Facilitation of Faculty Research and Departmental Affiliation

	Facilitating	
	Yes	No
Affiliated with a particular department, division, etc.	28%	61%
Number of bureaus:	(32)	(23)

A more important reason for distinguishing these two dimensions of integration into the school is that the kind of student and the training which is afforded by each type of integration differs. First, let us look at the training experiences provided by the departmental bureaus.

Table 7,38 indicates that units which are affiliated with certain departments in the school of education are much more likely to provide opportunities for working on projects, and indeed tend to favor assistantships over dissertation work; and are much less likely to have students from outside the school of education working in the unit. Thus, there are two major conclusions to be drawn from Table 7.38: integration into the school of education through a single department hampers the extension of research experience to non-education students; and project assistance rather than independent research is more likely to occur in departmental bureaus.

When we shift attention to whether the bureau facilitates the research of faculty members outside the bureau as an alternative measure of integration with the teaching departments, the picture changes radically. As shown in Table 7.39, facilitating units are less likely to provide opportunities for working with projects and

TABLE 7.38

Training Opportunities for Education and Non-Education Students in Bureaus, According to Departmental Affiliation

	Affiliated with a dept. in school of education*	
	Yes	No
1. Proportion of bureaus where all projects have students working with them:	67%	30%
Number of units:	(18)	(27)
2. Proportion of bureaus emphasizing each type of training:**		
Project assistance	73%	52%
Dissertation work	27	48
Number of units:	(15)	(25)
3. Mean proportion of students in unit from outside the school of education:	10.33%	23.11%
Number of units:	(21)	(28)

*Base numbers of bureaus vary because units which did not provide information are excluded on each question.

**If the number of students working on dissertations exceeded the number working with projects, the unit was classified as emphasizing "dissertation work."

tend to favor dissertation work over assistantships; and are much more likely to have students from outside the school of education working in the unit. In short, using faculty-facilitation as a measure of integration yields results which are the reverse of those yielded by the measure of departmental affiliation.

TABLE 7.39

Training Opportunities for Education and Non-Education Students in Bureaus, According to Facilitation of Faculty Researchers

	Facilitates faculty*	
	Yes	No
1. Proportion of bureaus where all projects have students working with them:	36%	59%
Number of units:	(25)	(17)
2. Proportion of bureaus emphasizing each type of training:**		
Project assistance	52%	72%
Dissertation work	48	28
Number of units:	(23)	(14)
3. Mean proportion of students in unit from outside the school of education:	22%	13%
Number of units:	(25)	(21)

*Base numbers of bureaus vary because units which did not provide information are excluded on each question.

**See footnote on Table 7.38 for method of classifying units.

Since we have already shown that facilitation and departmental affiliation are negatively related, the question arises whether this reversal of results is due to the interaction of these two dimensions. In other words, we need to determine if each dimension of integration produces the results in Tables 7.37 and 7.38 independently of one another before drawing conclusions about the distinctive type of training associated with each type. Table 7.40 permits us to examine the training afforded according to both facilitation and departmental affiliation. And without exception, the type of training originally associated with each dimension of integration remains, regardless of the other dimension. It should be noted, however, that previous relationships between facilitation and training opportunities are somewhat reduced when we control for departmental affiliation. In general, departmental affiliation seems to be a more influential dimension than facilitation.

Affiliation with a department probably insures a steady flow of research assistants from the department. Projects offer part-time jobs on which students can make extra money, and, since the bureau is highly visible to students in the particular department, no special interest in research is required for a student to consider working in the unit. And because it appears to be a natural place to seek employment, students need not be lured to the bureau by the opportunity to work on theses.

Active involvement of the teaching faculty in the work of the bureau (in facilitating units) may mean that students are prompted to join the bureau by their relationships with individual professors who are primarily concerned with helping students meet graduate requirements for the degree. Thus, we find that the amount of dissertation work exceeds the amount of assistantship on projects in facilitating bureaus, regardless of departmental affiliation.

TABLE 7.40

Training Opportunities for Education and Non-Education Students in Bureaus, According to Facilitation and Departmental Affiliation

			Affiliated with a dept. in school of education	
			Yes	No
1.	Proportion of bureaus where all projects have students working with them:			
	Facilitates	Yes	58% (7)	28% (18)*
		No	73% (11)	33% (6)
2.	Proportion of bureaus emphasizing dissertation work rather than project assistance:			
	Facilitates	Yes	33% (6)	53% (17)
		No	25% (8)	33% (6)
3.	Mean proportion of students in the unit from outside the school of education:			
	Facilitates	Yes	14% (8)	24% (17)
		No	9% (12)	19% (9)

*Numbers in parentheses are the numbers of units on which the percentages are based. These numbers vary because NA's on particular items are excluded.

The larger proportion of non-education students found in facilitating units is partly due to the fact that these units are less often connected with a particular department in the school of education. This conclusion is based on the reduced relationship between the presence of non-education students and facilitation of faculty research when we control for departmental affiliation, which can be seen by comparing Table 7.39 (facilitating versus non-facilitating units) with Table 7.40 (controlled by departmental affiliation). The relationship which remains when we control for departmental affiliation is probably explained by the greater likelihood that *non-education professors* are included in facilitating units. Half of the facilitating units have extensive relationships with academic departments outside the school of education, compared with only a fifth of the non-facilitating units. (This result is based on our index of interdisciplinary arrangements between bureaus and outside departments, described in Chapter IV.)

So far we have been solely concerned with *opportunities* for research training of various kinds. Now we shall look into the *production of researchers* according to the two dimensions of integration into the larger institutional setting.

Table 7.41 shows that facilitating bureaus are more productive of researchers than *non-facilitating bureaus regardless of departmental affiliation*. As a matter of fact, facilitation is a better predictor of the output of researchers than departmental affiliation. The latter dimension also seems to contribute to productivity, however, and especially among non-facilitating bureaus. Thus, combining the two dimensions into a typology (as shown in Table 7.42), we find that in general integration of research units with the teaching faculty is related to the production of researchers.

TABLE 7.41

Production of Researchers by Bureaus According to Facilitation and Departmental Affiliation

		Affiliated with a dept. in school of education	
		Yes	No
Facilitates	Yes	28.56 (9)	26.61 (18)
	No	20.00 (12)	8.86 (7)

TABLE 7.42

Production of Researchers by Bureaus According to Two Types of Integration with the Teaching Faculty (Facilitation and Departmental Affiliation Combined)

Type of integration			
Facilitative	Affiliated with a dept.	% of doctoral recipients entering research	
Yes	Yes	28.56	(9)
Yes	No	26.61	(18)
No	Yes	20.00	(12)
No	No	8.86	(7)

Since an emphasis on dissertation work tends to be characteristic of facilitating bureaus, the notion arises that work on the dissertation is more productive of researchers than purely project assistantship. If true, this could account for the relationship between facilitation and productivity. But it is an emphasis on project assistance rather than on dissertation work which is associated with adoption of research careers, as shown in Table 7.43.

TABLE 7 43

Production of Researchers by Bureaus According to Type of Research Training Emphasized

Training emphasized	% doctoral recipients entering research	
Project assistance	28.05	(20)
Dissertation work	19.64	(14)

An alternative explanation for the greater production of researchers by facilitating units is that the teaching faculty serve as better role models for students, possibly because of their greater concern for probing scholarly issues than is ordinarily the case in "autonomous" bureaus, which in education have tended to be service-oriented. As a matter of fact, not only are facilitating units more often oriented to research rather than to field services, but they tend also to be located in the "better" research schools (as measured by the deans' judgment of schools doing the best research), and to have more relationships with non-education departments in the university. If quality of the faculty who participate in facilitating units contributes to the production of researchers by these units, then we should find that only facilitating units (1) in the better schools, (2) mostly engaged in research, and (3) having extensive relations with non-education departments produce more researchers. Table 7.44 shows that this is precisely the case. Facilitating bureaus are more productive of researchers only when the school is judged as doing outstanding research, when more bureau personnel are involved in research than in field services, and when the bureau has relationships with departments and schools outside the school of education.

In short, facilitation does not automatically guarantee that research assistants or students working on dissertations will adopt research careers. If faculty resources are of lower quality or are mainly devoted to field services, then bringing these resources into the bureau may contribute nothing to the training of students for research careers. The type of role model incorporated in the bureau structure appears to be more important for research training than the allegedly greater attention of non-bureau faculty to the educational needs of students.

TABLE 7.44

Production of Researchers by Facilitating and Non-Facilitating Bureaus, According to (1) The Research Quality of the School, (2) Proportion of Bureau Personnel Engaged in Research, and (3) Arrangements with Non-Education Departments

	Facilitating		
	Yes	No	Diff.
(1) Research Quality			
Best	42.21 (14)	22.50 (6)	+19.71
Other	8.00 (7)	11.80 (6)	- 3.80
(2) % Personnel doing research rather than field services			
50% +	33.73 (11)	23.33 (3)	+10.40
0-49%	12.10 (10)	13.33 (9)	- 1.23
(3) Arrangements with academic departments			
High (2-6)	31.56 (16)	23.33 (3)	+ 8.23
Low (0-1)	11.57 (7)	13.18 (11)	- 1.61
(4) Arrangements with professional schools			
High (2-6)	34.20 (10)	15.00 (3)	+19.20
Low (0-1)	18.77 (13)	16.25 (12)	+ 2.52

E. Summary and Conclusions

Since we have inspected a great many dimensions of research training, we shall confine our summation to a few highlights.

We have joined a number of commentators in arguing that the range of opportunities for research training in education is extremely narrow; it is certainly inadequate for the demands being placed upon educational research fields at the present time. For example, less than a third of the doctoral granting schools of education place special emphasis on the preparation of researchers, and less than a fourth provide special programs (including doctoral programs which were designated as primarily concerned with research training). In light of these facts, it is hardly surprising that the production of "primary" researchers by schools of education is exceedingly low (about 6.3 per cent of the doctoral recipients per school in the past three years). And about three out of ten schools have not produced any doctoral recipients in the past three years who immediately entered positions where research was a primary responsibility.

To explore the institutional arrangements which might affect the output of researchers, we have suggested a framework consisting of (1) recruitment policies bearing on the level of student talent, (2) the research climate of the school, and (3) provisions which exist for preparing researchers, such as type of degree program, coursework, apprenticeships, and instruction by liberal arts and science scholars.

If we were disposed to select the most important set of factors, we would designate recruitment policies affecting the level of student talent. As we have pointed out, however, selectivity of the student body is chiefly operative when the school has a favorable research climate and when apprenticeships are provided on projects. It also appears that the requirement of professional experience prior to admission to the doctoral program interferes with the opportunities for research training provided by the more highly select schools, and this appears to be true even where more students are working on Ph.D.'s. (It is abundantly clear, incidentally, that Ph.D. recipients are more likely to enter research positions than Ed.D. recipients.)

Among the training provisions examined, coursework appears to be unproductive of researchers unless it is provided within the context of a bureau. Apprenticeship on programs are much more productive than course work in both bureau and non-bureau settings. (A high level of apprenticeship outside units eventuates in research careers only when a research training program exists.) With respect to training by professors from fields outside of education, we have suggested that researchers are produced only when the non-educators who are teaching in schools of education are of high calibre. For there is a relationship between production of researchers and the interdisciplinary make-up of the faculty only in the "better" research schools. Of course, such schools tend to have a more select student body, and so it may also be true that non-educators of whatever quality need better students in order to produce researchers.

Our major conclusion concerning research units is that enormous opportunities for research training are not being exploited. A very small proportion of doctoral candidates work on projects in bureaus, and on the average only about a third of these students enter positions where research is the main activity. In four out of ten bureaus none of the doctoral recipients who had worked in the bureau became "primary" researchers. Further, almost half of the students who do enter positions where research is a major responsibility do not remain in the academic setting, but instead are drained off by outside research agencies; and it is indeed a rare doctoral recipient who remains in the research organization where he was trained. Looking at the other side of this situation, i.e., the opportunities for training in bureaus, we have observed that the absolute number of doctoral students working on projects in bureaus is fairly sizeable, and an even larger number use the facilities or data of the bureaus for their doctoral dissertations (although there is probably considerable overlap between these two categories of students). And it is also plain that research units offer greater opportunities for internship than projects conducted outside of these units.

In large part, the failure of bureaus to produce more researchers than they do is probably due to lack of training funds, as revealed by the productivity difference between bureaus with and without training funds. But overall, only 15 per cent of the bureaus in our survey have training funds. The paucity of funds may also account for the fact that most bureau directors complained about the qualifications of students who work at their units. Funds for training programs in these units are especially important if the units are to compete successfully for the better students who tend to receive fellowships that do not require research experience. This problem brings us back to the importance of the selectivity of graduate students. Unless the newly available training funds from the Office of Education are used for attracting the very best students in education to research training programs in education, there is the distinct danger that efforts to prepare students for successful research careers will be of little avail.

Apart from funds for training, programs in bureaus which insure that students receive a variety of experiences on projects also seem to promote research careers. There may be a point of diminishing return for training programs, however, when the volume of apprentices reaches a certain level. If the number of students working on projects becomes unmanageable, then a program for rotating students according to their needs and abilities may be hampered. This conclusion is also suggested by our data. Further, it appears that internship opportunities are more productive than training seminars, although the latter make a contribution also. Ideally, both should be provided and integrated.

One of the major issues concerning the advantage of doing research through bureaus is that isolation from the teaching departments may be detrimental to research training. Our data tend to bear out this contention, especially with regard to bureaus which neither facilitate the research of non-staff faculty nor are affiliated with a particular department. Further, it was found that different types of students and of training experiences are associated with different types of integration into the school, i.e., divisional integration and schoolwide integration. Facilitating (schoolwide) bureaus tend to emphasize work on the dissertation, while bureaus which are affiliated with particular departments (divisional) emphasize assistantships on projects. This differential training may be explained by the tendency of students to enter the departmental units in search of jobs rather than for research experience, because of the greater accessibility and visibility of these units. In contrast to this type of unit, the schoolwide, facilitating unit may attract abler students via individual faculty members who are more concerned with supervising the dissertations of their own doctoral aspirants.

The fact that facilitating units are more productive of researchers than non-facilitating bureaus is not explained by the type of training emphasized by these bureaus, however, since an emphasis on project assistance rather than on dissertation work is related to the production of researchers. An alternative explanation for the advantage of facilitating bureaus is that teaching professors associated with bureaus provide superior role models for aspiring researchers, attracting and developing students who are committed to scholarship. But the process is not automatic, for facilitation of faculty research does not contribute to research careers when faculty resources are of a lower order. Only in the better research schools, and only when most of the persons associated with the bureau are engaged in research rather than field services, do we find a relationship between facilitation of faculty research and the production of researchers. Finally, it was noted that one of the drawbacks of the divisional unit is the failure to attract students and professors from outside the school of education.

CHAPTER VIII

RECOMMENDATIONS

The translation of social research into recommendations for action is a process which is shrouded in mystery. The main reason for this state of affairs is that detailed accounts of how recommendations actually grow our of research findings have not been written. The purpose of the present chapter is therefore twofold: to set forth recommendations for improving the organization of educational research; and to examine the way in which recommendations emerge from research, with particular reference to our own study. These two matters are treated in sections A and B, respectively.

In the section immediately following we present our recommendations. Preceding each set of recommendations, we briefly review the main points of our investigation pertaining to each topic.

A. Recommendations for the organization of educational research

1. Research units

Research organizations were an inherent feature of the growth of professional education in the early decades of the century. But due to lack of support from the universities, and the pressures from local school systems for services, these organizations tended to remain *marginal* to their institutions. The low priority of research in schools of education (as compared with service work or with advancement in the teaching hierarchy), and the conditions and ideologies which have promoted individualistic research, have posed serious barriers to the recruitment of staff members and to the emergence of a healthy research climate in these units. Lack of programmatic support for research and of faculty rank for staff members who do little teaching have reduced the possibility of continuity and security.

These difficulties have caused the directors to become greatly occupied with building up the organization and holding it together, rather than with intellectual leadership. And even under the best circumstances, it is not easy to identify or to develop the skills required of managerial scholars who need to possess a combination of intellectual and administrative competencies. The scarcity of such leaders makes it exceedingly difficult to match the strong points of particular men with the needs of particular organizations; to fill the vacuum between administration and scholarship in the universities so that innovations in higher education can occur more rapidly; and to fill posts in the federal government which entail frequent contact with scholars in the course of administering vital programs for research and training.

Recognition of these problems leads to the following recommendations:

a. To prepare individuals to fill positions as managerial scholars, university administrators with strong research commitments and productive scholars with managerial skills should be specially trained for research administration in a few institutes with national academic markets. Trainees should be prepared for filling positions in federal agencies as well as in research bureaus and professional schools.

b. Funds should be sought for programmatic support to provide for continuity of investigation in related problem areas without the necessity of recurrent application for funds, or of meeting the superficial restrictions of contracts for short-term projects. The need for programmatic support is especially great in bureaus which compete with R & D Centers for personnel.

c. Research units should facilitate some faculty research, but only if the faculty's research plans are of exceptionally high calibre, in order to insure (1) that the best graduate students are attracted to the unit, (2) that students receive meaningful training in connection with doctoral work, and (3) that ties with intellectual interests in the faculty are maintained.

d. The directors of larger research units should be provided with full-time administrative assistance so that their own scholarly growth is not impeded by routine administration. And wherever necessary directors should assign the responsibility of advising on elementary statistical and design problems to one of the staff members.

e. Staff members of units should be afforded all the privileges of the teaching faculty, including sabbaticals for upgrading their knowledge of research and of theory related to their field.

f. Research units should seek to establish a tradition of studies by several means: (1) house seminars wherein project directors seek advice about their current research problems and colleagues mention ways in which they have handled similar difficulties; (2) substantive seminars which focus on particular research topics; (3) retention of graduate students for at least two years of postdoctoral research in the unit; (4) emphasis on the development of research assistants into project directors by assignments at levels of progressively greater responsibility, culminating in the creation of sub-projects for qualified assistants; and (5) formulation of a particular substantive or methodological specialty which will draw national attention.

g. Formal identification with a particular department in the school of education should be avoided in establishing bureaus in order to encourage academic scholars to join the organization. A variety of joint arrangements, such as seminars and exchange of consultation on cognate projects, should be established with the arts and sciences.

h. Researchers who remain outside of any unit should receive the services of a research coordinator. The coordinator should be provided with a small staff and special administrative funds, and should be able to devote at least three-quarters of his university time to the job.

(Other recommendations pertaining to bureaus will be found under "Service and Research," "Relations with the Arts and Sciences," and "Training for Research Careers.")

2. Service and Research

The insatiable demand of school systems for services has seriously harmed the research capabilities of schools of education. Not only have services drained off a great deal of potential manpower from research, but their prevalence has even blurred conceptions of the nature of behavioral science research. Techniques associated with field services have not been exploited for research purposes because they are regarded as the property of service workers. The way in which services accumulate and eventually erode the functions of research is demonstrated by the fate of several well-known bureaus of educational research. Yet despite the problems which have arisen in the past, there is still no division of labor between service and research in many bureaus. It is in the public universities, of course, where competition between service and research is a most serious matter.

In light of these observations we recommend the following:

a. Routine services for school systems, and especially social bookkeeping, should be turned over to State Departments of Education which have sufficient personnel with the required competencies. Services should be performed by universities only in connection with systematic, theoretically grounded research; or in order to develop new tools, such as new types of social bookkeeping.

b. Where the State Department of Education does not have the requisite skills, the university should sharply separate services from research, unless services are supplied in conjunction with systematic, theoretically grounded research. Thus, bureaus of research which provide routine services should specialize entirely in either research or service. (At the very least, a clear-cut division of labor with separately budgeted sections should be established.)

c. Scholars in education should turn their attention to various means of joining research and service through concurrent evaluation.[1] For example, demonstration projects should be observed systematically in order to gain insight into the modifications which occur in educational designs when implemented. Other reasons for research in connection with action programs are: to develop new research tools for measuring events during implementation (i.e., not only after implementation, as is customary with the psychometric school of evaluation); to help change-agents cope with unforeseen developments by reference to data being collected and to theories of innovation; to study the interaction between administrative processes of innovating and rates of diffusion or acceptance of new practices; and to learn more about the social constraints in educational settings which cause rigidity.

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[1] The term "concurrent evaluation" was suggested to us by Dr. Jane Hauser who is presently engaged in this type of activity in the health field.

Concurrent evaluation of action programs is possible if the research and service roles are sharply differentiated in the early stage of work; if appropriate mechanisms exist for controlled interaction between role partners ; and if the research function is accorded equal status with the service function in terms of time, money, and authority to oversee the program of action.

d. Educational leaders, whether they are located in universities, school systems, or state and federal agencies, should abandon the perspective that educational change tomorrow is the only worthwhile goal of leadership. Of equal importance is understanding of the complexities of teaching and learning within bureaucracies that are serving a variety of unrecognized goals (such as the upward movement of lower middle class aspirants to professional status through teaching). It is often necessary to mentally isolate oneself from the perennial emergencies and fads of professional education in order to see basic tendencies, to draw up long-range educational policies, and eventually to seize the initiative from sporatic social pressures on the schools.

3. Relations with the Arts and Sciences

Educational research can benefit enormously from an infusion of theoretical perspectives, methodologies, and normative standards from the arts and sciences. Scholars in the disciplines who are interested in education as a field of study need to establish relations with professional educators so they can gain familiarity with educational systems, obtain access to research sites, be informed of past research which bears on their interest, and be persuaded of the importance of undertaking problem-oriented studies. Unfortunately, the calcified structure of the universities, the concern of professional educators with maintaining a monopoly on educational resources and policies, and the low prestige of schools of education have hampered the development of collaborative arrangements. As a consequence, contacts are informal and sporatic; the bulk of research on education is today conducted by arts and science scholars who have virtually no familiarity with professional education; and the better students prefer academic fields over educational departments.

There are several means by which the disciplines and the profession can be brought together more effectively:

a. Institutes for both training and research should continue to be founded and operated jointly by schools of education and academic departments; or if not feasible, then bureaus in education should not be primarily affiliated with any particular department in the school.

b. Joint seminars which comprise several professors and a few graduate students should be organized around scholarly issues, and meetings should be held alternately in the school of education and in the relevant academic department or institute.

c. Joint selection of the education faculty should be practiced, even in the hiring of personnel for the "professional" departments in the school of education.

d. Academic professors should serve on examination committees for the Ed.D.(as well as for the Ph.D.) where they should emphasize the importance of the candidate's ability to keep abreast of, evaluate, and implement research results.

e. Training programs for educational researchers, such as those supported by the U.S.O.E., should include students from both education and academic departments.

f. Associations of educational researchers should actively recruit members from the disciplines, and should offer special divisions within the association to service the academic people.

g. The discipline associations which have not already done so should establish journals for research on education.

h. Proposals submitted to the U.S. Office of Education should be examined for evidence of some form of collaboration between professional educators and academic scholars, preferably at the level of co-principal investigators.

i. In all such arrangements, special attention should be devoted to collaboration with social scientists (i.e., non-psychologists) in order to redress the serious imbalance between psychological and non-psychological approaches in schools of education.

4. Training for Research Careers

Lacking a tradition of research, many schools of education are unable to instill research orientations into graduate students or to provide the requisite internship experiences on faculty projects. And what is equally important, these schools have failed to attract students who have the basis aptitudes for becoming excellent researchers or whose interests have not already been committed elsewhere. Finally, due to the emphasis on professional training through course work in a variety of specialties, training for research careers assumes minor importance in most schools, and serious programs for research training are a rare exception.

Our recommendations for improving the preparation of researchers are as follows:

a. There are five fundamental types of training which need to be given within a special program for students who wish to make research a career:

   (1) instruction in the established doctrines -- the "grammar" or basic doctrines of research can generally be provided through lectures;

   (2) explication of texts -- detailed analysis of outstanding pieces of research should be carried out in special seminars;

   (3) clinical experience -- internships should be provided by work experience on faculty projects;

   (4) field observations -- a minimum of one month spent on exploratory field work in school systems is necessary to discover the structural constraints of education, the leverages of change, and the ideologies and day to day problems of practitioners;

   (5) research reporting -- research papers and proposals prepared by the students themselves should be discussed by other students in a special seminar.[2]

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[2] Detailed proposals for a system which combines these five components are currently being worked but are not included here.

b. Students should be urged to apprentice themselves in research bureaus which offer opportunities for work on different phases of several projects; and where they can meet together informally and reenforce their research commitments, be exposed to senior staff who devote more time to research than to teaching (often from academic departments), and appreciate the possibilities of large-scale research on frontier problems -- in short, where they can become socialized into a culture which stresses research.

c. Since not all research units afford the kind of climate mentioned above, it is further recommended that research units seek funds for support of training programs which will allow them to rotate students among projects depending upon their needs and abilities (with compensation to project budgets for time lost), run seminars on current projects, provide technical assistance for students who are carrying out their own projects, make data available for dissertations through data archives, and provide coordination by means of a training director for every dozen students.

d. Students should receive credit and be graded for their work on projects. If fewer courses were required at the same time, more faculty could be released from classroom teaching for research. In short, doctoral training should be shifted from the classroom to the workshop. Another arrangement that would further this transition would be for Research Associates to serve on examining committees for the Ph.D.

e. The requirement of professional experience or of the teaching certificate for admission to doctoral candidacy in education should be eliminated for students who wish to specialize in empirical research.

f. Schools of education which choose to emphasize professional training should not attempt to train students for the Ph.D.

g. Ed.D. candidates should receive more training in the utilization of research and less in the conduct of research, and their dissertations should demonstrate an ability to evaluate and implement research results rather than to carry out research.

h. The U.S.O.E. should offer contingency funds to every project submitted to it which assumes an obligation to train a graduate student in conjunction with the project beyond the minimal needs of the project for routine assistance (e.g., by contracting to help the student write his thesis on a topic covered by the project which is of mutual interest to the project director and the student). In other words, training should be built into research projects without the onerous necessity of seeking additional funds through a separate proposal for each student. Adoption of this plan would also reduce the exploitation of students as research assistants.

i. Graduate schools of education should institute means of identifying and attracting better undergraduate students, preferably from the arts and sciences, even if this entails intensive recruitment campaigns across the nation.

j. A center for research and development on the training of researchers in the behavioral sciences, with special reference to education, should be supported.

5. Federal Administration of Research Funds

The phenomenal growth of federal funds for research and development in education has created serious organizational problems. New programs have been implemented with virtually no provision for assessing their impact on the scientific and professional community over the next few years. The flood of proposals which has descended upon the U.S.O.E. has caught the agency seriously shorthanded because of the difficulty of finding scholars with managerial skills who are not reluctant to work in a federal agency. New review procedures have been established which isolate individual consultants from one another, and which place much greater responsibility in the hands of overloaded staff members in the Bureau of Research. The founding of R & D Centers has posed a competitive threat to smaller bureaus of research which were already having considerable difficulty recruiting able staff members. And no doubt, cost-accounting criteria have assumed even greater importance than in the past as a result of the increased volume of funds, requiring the assistance of budget specialists who have little familiarity with the administration of research in the universities.

In view of this state of affairs, we recommend the following:

a. Opportunities and facilities for part-time research should be offered scholars who join federal agencies which administer research funds. The chance to do research on the program of the agency itself would be especially attractive, and in the long run would produce a series of high quality monographs that would contribute substantially to policy-making.

b. Budget negotiators should have experience with research management in universities rather than chiefly with industrial research and development, and should be clearly under the authority of the chiefs of the research branches.

c. Research programs for continuous, multi-project research by leading scholars should be supported as soon as possible, especially in institutes which are threatened by R & D Centers with competition for personnel.

d. Seed money for the development of proposals should be provided upon receipt of a worthwhile statement of intent to produce finished research plans within a specified period.

e. A panel system for evaluation of most project proposals should be reinstated, but on a local or regional rather than national basis in order to keep the expenses of consultants to a minimum.

f. A special developmental officer should be appointed with responsibility for following up supported research in order to see what happens to the reports.

g. Several private foundations should be approached to provide joint support for a continuing assessment of the impact of new federal programs on the scientific and professional community. The assessment should include: surveys of the recipients of research funds and of research managers to ascertain organizational problems, to test the reaction to new programs which are in the planning stage, and to study how funded research is disseminated; before and after studies of trainees in programs for research preparation; case studies of R & D Centers and Regional Labs; analysis of trends in the rates of submission and of approval of proposals according to origin and content of research plans; surveys of school systems to assess the impact of supported research; and content analysis and systematic evaluation of research reports growing out of funded projects.

The following recommendation is offered as one of several possible means of improving communication with the field. Since we have not made a special study of the U.S.O.E. Bureau of Research, we cannot claim that the arrangement suggested below is the best one. Thus, the following recommendation is offered more as a model containing several important functions rather than as a concrete proposal.

h. An office should be created which serves a "trouble-shooting" function and maintains liaison between applicants for funds and officials in the various divisions. The office should be independent of existing branches and divisions and should be empowered to report directly to the Commissioner. Staff members should be drawn from the existing branches of the Bureau of Research on an annual rotation basis.

The responsibilities of the office should include: "express handling" of proposals which have special deadlines for the commencement of research; shepardiing of outstanding proposals with unconventional features; giving constructive advice to applicants whose proposals are not meritorious, and arranging for developmental funds to upgrade the original plans; constant availability by phone and in person to scholars who are planning research or who request up-to-date information about the disposition of their application; and collection and analysis of grievances about the agency's administration of funds to be set forth in monthly reports to the Commissioner.

B. The Interplay of Research and Action

As mentioned earlier, little is known in a systematic way about the process of deriving recommendations for action from research findings. There are actually two issues that need to be examined, corresponding to two distinct phases in the interplay between research and action. The first issue arises in the phase of planning and executing research, and concerns the way in which problems are adopted for study and how problems dictate research operations and delimit the results. The second issue arises later when the evidence is already gathered, and is concerned with the way in which recommendations grow out of completed research. We address ourselves mainly to the latter issue here; but first, a few words about the earlier phase.

Discussions of research and development often assume that ideas about action develop only when research is completed. The current emphasis on "linkage roles" for the transformation of research into practice reflects this assumption quite clearly. But very often, concern for implementation is present throughout the research operation, and substantially affects the way in which the research is conducted. Recommendations for action begin to take shape in the research process through the selection of key variables and through the handling of these variables in a certain manner. An example from our study will make this clear.

The framework for carrying out our analysis of the institutional factors which contribute to the production of researchers (Chapter VII) emerged only very gradually in the process of collecting and examining the data. One of our early ideas was to classify the schools according to some scale of "research training orientation." While searching for variables that might be included in this index, we noticed that in a rather routine question we had collected information about the proportion of doctoral recipients who entered positions requiring a good deal of research. The greater practical value of focussing on this variable diverted us from an investigation of the conditions which promote a "research training orientation." Thus, we shifted from a global input variable, which would have required theoretical institutional analysis with little implication for practice, and turned our attention to a unidimensional output variable. In short, we were no longer interested in why schools of education allocate resources in different ways, but only in the effects of allocation of resources. The implications for action promised to be much more clear-cut in pursuing the latter mode of analysis.

But this does not mean that our new approach is devoid of theoretical interest. On the contrary, the mode of analysis which we finally selected gives us an opportunity to study the impact of various socialization mechanisms (training arrangements) on the adoption of an institutional value system (research climate) by actors of different kinds (selectivity of student body and type of doctoral program). In short, we are now able to study the way in which social structures mediate between personality and culture. Thus, consideration of the practical implications of research by no means precludes theoretical analysis -- as a matter of fact, research oriented towards practice may be turned to great advantage for theoretical work.

The second phase in the interplay between research and action occurs when research is completed and the time has come to draw up specific recommendations. In approaching this subject, we should first recognize that facts do not speak for themselves anymore than they can be collected without the aid of a conceptual framework. Indeed, there is always an element of personal judgment involved in drawing up recommendations based on empirical research. Without the ability to size up a complex situation and to focus on those factors which have a high probability of effecting change, there can be no recommendations -- there can be only summaries of results. In exercising the judgment required for drawing up recommendations, one's personal experience and values often come into play. In short, the vital step between facts and implementation cannot be taken without the help of personal judgment and perspective.

These observations do not deny the importance of reliable information. One definitely must have some knowledge of the existing situation, including its history; and one should also know about the consequences of either natural or experimental variation from the normal state of affairs in order to decide whether such variations should be implemented more widely. In short, the better one's facts the better the recommendation, providing that one's judgment is also good.

All recommendations combine both personal perspective and factual information in varying quantities. As a matter of fact, a lack of research evidence can be compensated for by exceptional vision, and a lack of vision can be compensated for by an unassailable body of research evidence. Obviously, the best kind of recommendation is one which combines both evidence and sound judgment to the highest possible degree. But the difficulty of studying certain social problems systematically, the limited supply of men who combine vision with painstaking research skills, and the pressures to solve problems immediately, render this goal almost impossible to achieve. The best we can usually hope for is an appropriate mixture of objective evidence and personal judgment.

These points can be made more concrete by a simple diagram. By combining the two dimensions of (1) balance between information and judgment and (2) type of evidence, we are able to generate several classes of recommendations. (The dimension of "type of evidence" will become clear from the examples given below.) The diagram is presented in Figure 1. In each cell we have inserted a number representing a recommendation made earlier for purposes of illustration.

The two classes of recommendations which are most commonly encountered in education are Class C and Class G. In Class C we would include all forms of advice which are given by special consultants whose personal experience and statesmanship have equipped them to render judgments on the basis of scant qualitative materials. In Class G we find controlled experiments on classroom practices where the restrictions of the design

FIGURE 1

Classes of Recommendations for Social Action

Type of evidence	Judgment-Information Scale		
	Information: +++ Judgment: +	++ ++	+ +++
Qualitative (case studies, documents, informant interviews, observations)	A (2-b)	B (1-d)	C (2-d)
Quantitative (statistical data): Configuration of results	D (1-h)	E (1-a)	F (1-cefg)
Bivariate sequence	G (4-i)	H (3-c)	I (5-bcdh)

and clarity of results obviate the necessity of exercising personal judgment about what to recommend. Recommendations are implicit in the outcome of an experiment. (This is an oversimplification, of course, since there is often disagreement about the interpretation of experimental data. What we have in mind is the experimental model, rather than experiments as they are actually conducted and reported.) Thus, it is more or less clear what kinds of recommendations are comprised in Classes C and G. It is the remaining classes which deserve special attention.

Class A -- Ample qualitative information with little personal judgment required

Historical research whose practical implications are fairly clear-cut would fall into this category. An example from our own study are the historical case studies of the conflict between service and research in selected bureaus, presented in Chapter VI. The implications for practice are clear-cut because of the way in which service obligations consistently compromised research, unless special efforts were made to protect the research domain. These case studies led to the recommendation that bureaus should specialize wholly in research or in service, or at the very least, that separately budgeted divisions should be created.

Class B -- Incomplete qualitative evidence requiring personal judgment of its implications

In this category belong inferences based on somewhat accidental qualitative data, such as a chance remark by a respondent, an unexpected document, or a puzzling observation of the manner in which a group behaves. Because of the limitations of the evidence, the researcher needs to be alert to the implications of his data, and perhaps even prepared to argue the point beyond the data at hand. An example from our study is the remark of a single bureau director who explained that his position hindered his own research for the following reason:

> I spend so much time assisting others who are ill prepared in experimental design and statistical analyses that I don't have time for my own work.

This remark suggested an important reason why more directors said their research was hindered than helped by their position, despite the fact that they have the resources of an organization at their command and enjoy a unique intellectual climate. Our inference about the generality of the problem led to the recommendation that directors should hire a special consultant to help the staff with elementary questions about study design.

Class C -- Scant qualitative evidence requiring considerable exercise of personal judgment

We have already commented on the sort of recommendation which is typical of this category. An example from our own study is the recommendation that professional educators should realize that the immediate improvement of education is not the only worthwhile goal of leadership. Our evidence for thinking that this perspective has hindered the advancement of research in education is virtually nil. But we are nevertheless convinced that an intellectual climate which stresses immediate payoffs, with very little attention paid simply to understanding the phenomena being dealt with, is detrimental to the growth of science. Thus, we have largely applied our own personal perspective to the matter.

Class D -- A configuration of results which points to a clear-cut problem

By configuration of results we mean a set of data-fragments (i.e., correlations or distributions) which pertain to the same problem area. Illustrative of this category are the findings pertaining to the work of research coordinators. First, we saw that coordinators spend a great deal of time stimulating research. We then observed that they tend to be located in schools where various groups do not emphasize research as an obligation of the faculty. Further, we showed that the length of time which the position has existed is slightly negatively related to the amount of faculty research taking place. In addition, we reported that only about a third of the coordinators have special funds for their work, and that they spend only about half their time in this capacity. In spite of these drawbacks, we also saw that coordinators perform intellectual tasks which are performed less often in schools without coordinators. Adding up all of these findings, it became apparent that the coordinators are seeking to develop research in schools where other goals have primacy; that they are filling a gap in research administration; and that they receive meager support from the institution. This configuration of results led to the recommendation that research coordinators should be given much more help by the university in fulfilling their duties -- they should be relieved from other responsibilities and should be provided with a small staff and ample funds for administrative purposes.

No single set of findings could have produced this recommendation. Indeed, if we had fixed our attention on the negative relationship between volume of faculty research and the length of time a coordinator has existed, we might have advised schools of education to eliminate the position. Only by examining a cluster of findings were we led to our final recommendation. And given the way in which the pieces fit together, not much judgment needed to be exercised in drawing conclusions from the data. (Note also that we did not need to depend upon the demonstration of a causal relationship between any two key variables; hence, the importance of distinguishing between a "configuration of results" and a "bivariate sequence" in our classification of the types of data which serve as bases for recommendations.)

Class E -- A configuration of results which do not point directly to the same problem, but which can be brought together by the judgmental perspective of the researcher

In this case it is not quite so clear that data-fragments are relevant to one another. The researcher who is interested in drawing implications for practice must exercise some judgment in perceiving the mutual relevance of findings. For example, we saw in Chapter IV that research units have suffered from a high mortality rate over the years. In Chapter V we learned that directors of research units have exercised a strong influence on the development of those organizations which have survived. A little later we showed that directors perform a wide variety of roles, and that they tend to concentrate on certain aspects of their position while ignoring others. Considering these findings, we reached the conclusion that the difficulty of finding people capable of filling the multiple roles required of an effective director has caused many bureaus to wane. This conclusion led to the recommendation that qualified persons should receive special training for research administration.

Class F -- A configuration of results whose relationships are tenuous, requiring a good deal of critical judgment based on personal values and experience

Sometimes the gap between data-fragments grows very large, although the problem area in which these fragments are located is quite important. Our efforts to determine whether in general educational research should be conducted within research organizations affords an example of this class of problems.

We found a variety of features of research units which prompted us to conclude that more research should be undertaken through organizations, despite the weaknesses of some of these units. For example, we discovered that more collaboration takes place inside than outside bureaus; that a larger proportion of projects have students working with them; that topics of research in bureaus tend to be more contemporary, and more oriented to neglected fields, such as the social sciences; that newer units have more extensive relations with the arts and sciences, suggesting that bureaus are increasingly providing a necessary bridge between the professional school and other departments; that unit directors are much more "supportive" in intellectual matters than coordinators outside of these units, although they are not more "interventionist;" that the approval rate of proposals submitted to the U.S.O.E. by bureau staff was somewhat higher than for other proposals; that schools with research units were more often considered to be doing the best research; and finally, that research units are underutilized in education as compared with liberal arts and science departments.

If one accepts the value premises of the author -- that collaboration, research training, social research, interdisciplinary work, and some monitoring of projects are valuable -- then the conclusion that we reach is that research units provide superior conditions for research, and that they are in sore need of support in schools of education. We therefore recommended several ways in which they should be strengthened. Once again, no single finding led to our recommendation. The results which were drawn together in our example were scattered throughout the report, indicating that there was no natural confluence of results as in the case of research coordinators. Hence, the investigator had to retrace his steps over the entire research operation in order to identify data-fragments and to search for their connections. And in large part it was our personal conviction that research units afford superior opportunities for research which motivated us to collect evidence of their superiority.

Class G -- Causal relationships (bivariate sequences) with obvious implications for practice

We move now into the area of recommendations based upon experimental models. The number of recommendations which have grown out of this type of research on education is legion. Indeed, one easily gains the impression from the educational research journals that the only method of arriving at decisions about action is through experimentation in conjunction with achievement testing.

In our study we have used a number of "bivariate sequences" to arrive at recommendations. In particular, our chapter on the production of researchers provided a large number of relationships which were sometimes interpreted as causal. For example, the relationship between selectivity of the student body and production of researchers, which remained under varying institutional conditions, was interpreted as persuasive evidence of the effect of quality of students on successful preparation for empirical research. This observation led easily to the recommendation that much more attention should be paid to recruitment of able students. Numerous other examples of the use of bivariate sequences which do not require any special judgment for deriving recommendations can be found in Chapter VII.

Class H -- Questionable causal relationships which require some judgment as to implications

Often the evidence of a correlation is not very persuasive without some additional considerations. This is a problem which is often encountered in survey research, and various guidelines have been worked out for coping with it.[2] An example from our study is the strong relationship between the participation of arts and science professors in the recruitment of faculty members in education and the "research quality" of the school (as measured by the deans' and coordinators' choices of schools producing the best research). That joint selection promotes research quality is by no means evident from this single correlation for a variety of reasons. It was therefore necessary to take into account other considerations: that the relationship remains when we control for the overall quality of the institution (using the Keniston measure of university reputation); that the proportion of the faculty in the "best research" schools who were trained mostly outside of education is no larger than in the other schools, suggesting that it is not the quality of the education faculty which prompts arts and science scholars to participate in their affairs; and that joint selection of the faculty is more highly related to research quality than several other joint arrangements which do not entail control over the school of education. In addition, there is the consideration that arts and science professors have been highly critical of the level of scholarship in schools of education, and therefore have reason to seek improvement in the quality of research. Thus, a variety of inferences have to be made to support a causal relationship between joint selection of the faculty and research quality. Since the bivariate sequence is a weak one, the judgment of the investigator as to the plausibility of a causal connection looms large.

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[2] Herbert Hyman, Survey Design and Analysis: Principles, Cases, and Procedures, Glencoe, Ill.: The Free Press, 1955; Chapter V.

Class I -- Highly questionnable relationships which require considerable judgment as to implications for practice

In the preceding example of a bivariate sequence we at least had information about the existence of a relationship between two variables, although we were uncertain of the causal connection. In the present instance, however, we are not even sure of the relationship between variables. Thus, it becomes necessary to exercise considerable judgment in arguing the existence of a relationship, and one's own experiences and values are very likely to assert themselves.

Several of our recommendations concerning the U.S.O.E. grew out of this type of inference. Thus, on the one hand, we found that federal sources of research funds were least ofter preferred by deans; on the other, we saw that cost-accounting criteria weighed very heavily in approval of research proposals submitted to the Cooperative Research Program. Here the latter finding takes on interest mainly as a symptom of federal procedures, which are much more economy-conscious and ritualistic than those of other funding agencies. Our own experience with different sources of funds prompted us to interpret the deans' attitudes as stemming from the restrictions of federal programs. We therefore recommended various ways in which the U.S.O.E. could tailor its program more closely to the needs and conditions of research in the university setting. For example, scholarship is not a matter of devoting a precise amount of time and money to a predetermined problem -- textbooks on research notwithstanding. Serious scholarship is characterized by long-term continuity of effort with many divergent paths being taken on the way to a solution, and with many rejections of past notions as a consequence of accumulated knowledge. In addition, the short-run features of project support do not provide security of involvement in research. Thus, the directors of many research units spend an inordinate amount of time obtaining new money to keep the unit alive. Some are quite successful in this role; others, who might be very able scholars but do not possess the Midas touch, suffer the decline of their organization. Consequently, we recommended that funds for programmatic research be made available without further delay; that seed money for devising research plans also be made available; and that lines of communication between the scholar and the U.S.O.E. be improved by means of a special office with broad authority.

APPENDICES

APPENDIX A

Features of Research Proposals Submitted to the Cooperative Research Program Between 1956 and 1963

In the summer of 1963 a sample of research proposals which had been considered for support by the Cooperative Research Program, USOE, were coded and analysed. Every fifth proposal received in Washington was selected from the files, and its major characteristics were recorded for later coding.* Proposals for demonstration projects, conferences, and other developmental activities were eliminated since we were exclusively concerned with empirical research. The sampling procedure yielded a total of 423 proposals, 21 per cent of which had been approved.

Because of the emphasis in our project on the institutional setting of educational research, the proposals were analysed: first, according to whether the research was to be conducted within a research unit, facilitated by a research unit, or independent of any such unit; and second, according to whether the principal investigator was affiliated with a school, college, or department of education, or whether he was affiliated with another division of an institution. Submission and approval rates for each of these types of projects were tabulated. (The overall distribution of proposals will be presented and discussed in the final section of this appendix.)

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*On certain items of interest only the approved proposals were coded, since these are described in the publications of the USOE and since gathering the information from all proposals in the sample would have been extremely time consuming.

Since a number of observations are made on the basis on our data, there are a few major points which need to be underscored. So that the reader will not overlook these points, we shall state them here in summary form.

1. The majority of proposals for research have been submitted by individuals who are not connected with research units (p. 4). But it seems that the proportion of bureau proposals has been increasing over the years (pp.4-5).Considering together all the proposals submitted since 1956, bureau projects have been more often approved (p. 6). In recent years, however, the approval rate for bureau projects has dropped below the approval rate for non-bureau projects.

2. Bureau and individual projects have differed in a number of ways, including: magnitude of the project in terms of money, staff, and duration (p. .8) the "traditionality" of topics (pp.11-12); the group or population studied (pp.15-16); methods of research (p. 17); discipline of the principal investigator (pp.18-19); and several features of the institutional setting of the proponent (pp.18-22). Further, there are certain features of bureau and non-bureau projects which are differentially associated with obtaining support from the USOE.

3. Turning to the departmental setting of the proponents, i.e., education versus other departments in institutions of higher learning, we find that the number of proposals received from non-educators has risen four-fold since the inception of the Cooperative Research Program, while the number from educators has remained fairly stable (p. 27). Since 1960 the majority of proposals from colleges and universities have originated with non-educators.

4. It appears that the disciplinary composition of the Research Advisory Committee in each successive year affected the approval rates of educators and non-educators differentially. In other words, there was a close relationship between the proportion of non-educators on the Committee and the approval rates of non-educators year by year (pp. 29-30). It is also of interest that despite the fact that the majority of proposals submitted by colleges and universities between 1960 and 1963 originated with non-educators, educators remained in the majority on the Research Advisory Committee. (The Committee for fiscal 1964 was not included in the analysis because of the new arrangement with panels.)

5. There are fewer specific differences between the proposals of educators and non-educators than between the proposals submitted by bureaus and by individuals outside of bureaus (pp. 31-37).

6. By comparing the proportion of proposals submitted by educators in various fields with the proportion of doctorates awarded in these fields in 1957, we find an "under-production" of proposals relative to doctorates in the fields of school administration, guidance and counseling, elementary education, and the social sciences. "Over-production" of proposals has been characteristic of the fields of educational psychology and special education (pp. 36-38).

7. Looking at the distribution of proposals according to various specific features (i.e., apart from the types of institutional settings which we have mentioned above) it appears that the great majority of proposals were for research on students, while such groups as administrators, parents, guidance counselors, and school board members were virtually ignored (pp. 44,47-48). Faculty members were studied only slightly more

frequently than the community. Further, the research method most frequently used was some kind of test (76% of the approved proposals), while less than half of the approved projects conducted an experiment, and only a third utilized the survey technique (pp. 47-48). Finally, psychologists more often submitted proposals than individuals in any other single discipline (p. 47). These findings point to the prevalance of somewhat traditional types of studies conducted under the sponsorship of the USOE during the period 1956-63.

I. Affiliation with Research Bureaus

The proposals were classified according to whether the applicants intended to carry out the project: within a research unit; with the facilitation of a research unit but not located there; or, altogether independently of a research unit. We shall refer to these three types as bureau, bureau facilitated and non-bureau projects, respectively. (Unless we specifically refer to approved studies, a "project" will mean a study which has been submitted for approval.)

The great majority of proposals which were submitted were for non-bureau projects (68 per cent). Fifteen per cent were for bureau facilitated projects, and 15 per cent were for bureau projects. (The affiliation of 2% of the proponents was not ascertainable.) These figures afford clear confirmation of the extent to which educational research is carried on independently of university research units.

There is an indication, however, that the proportion of bureau projects has been increasing. As shown in Table 1, in 1956 10 per cent of the proposals were for bureau projects; in 1963 the figure was

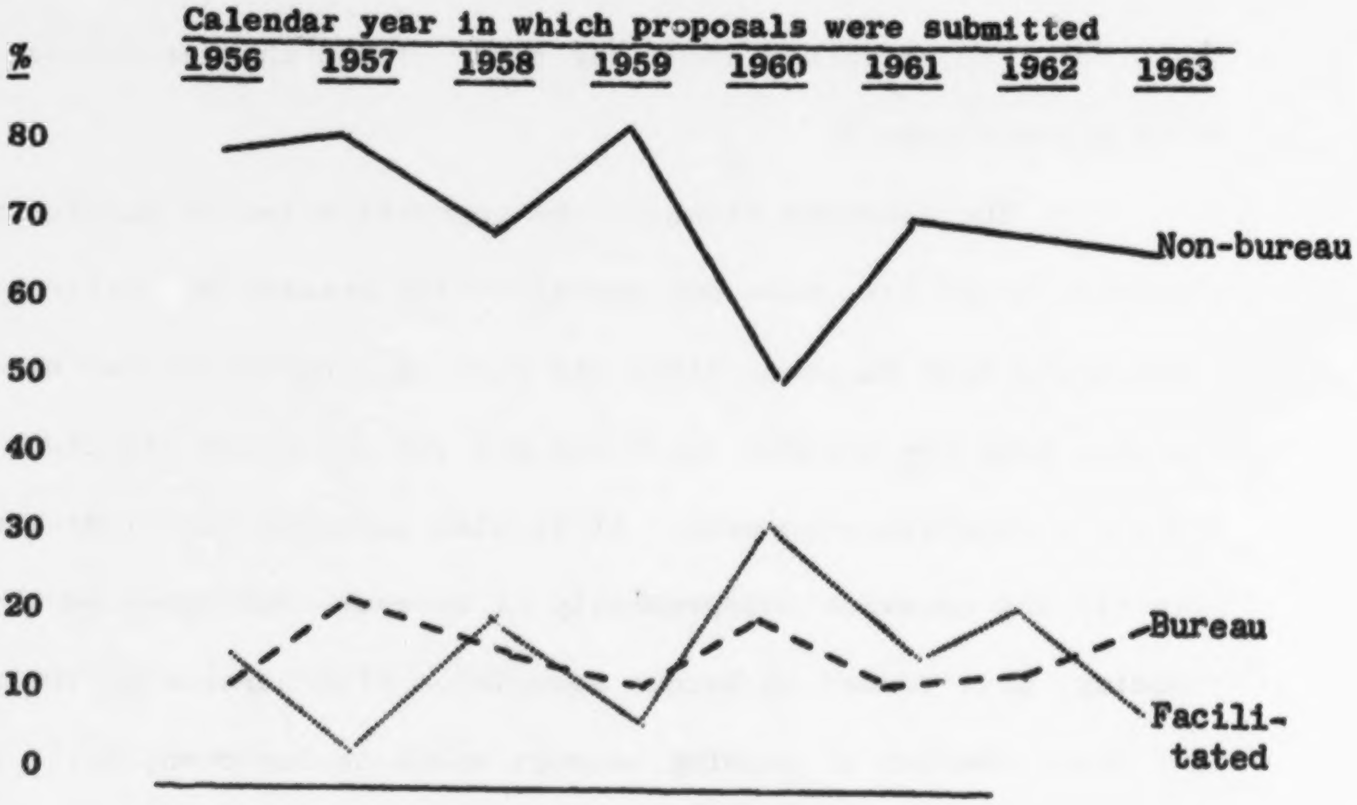
Table 1

Annual Submissions by Type of Project

Type of Project	Calendar year in which proposals were submitted							
	1956	1957	1958	1959	1960	1961	1962	1963
Bureau	10%	17%	14%	12%	19%	12%	13%	24%
Facilitated	12	3	17	9	29	17	19	11
Non-bureau	78	80	69	79	51	71	68	65
	(41)	(35)	(35)	(44)	(62)	(76)	(75)	(55)

Figure 1

Annual Submissions by Type of Project



24 per cent.* Facilitated projects also show a small proportionate increase. Conversely, non-bureau proposals dropped from 78 per cent in 1956 to 65 per cent in 1963. These trends have not been highly linear, however, as shown by the alternate peaks and troughs in Figure 1. But it does appear that proposals for bureau projects have been on the increase. Stated somewhat differently, bureau and facilitated projects combined rose as much as threefold between the periods 1956-57 and 1962-63, while non-bureau projects rose only 69 per cent in the same period.

In view of this upward trend in the submission rates of bureau projects, it is especially interesting that the approval rate for these projects declined. Between the periods 1956-57 and 1962-63, the proportion of approved bureau projects dropped from 33 per cent to 13 per cent; similarly, the proportion of approved facilitated projects dropped from 33 per cent to 10 per cent. The approval rate for non-bureau projects, on the other hand, remained about the same. These changes can be seen in Table 2 and Figure 2.

The downward trend in the approval rates of bureau and facilitated projects could have been due partly to the greater proportionate rise in submissions from bureaus, since the rise in submissions may have included proposals from new bureaus which had not yet developed standards or guidelines for research proposals. It is also possible that individuals who formerly did research independently of bureaus, but whose work was not outstanding, have tended to become associated with bureaus on the assumption that their chances of gaining support would be improved; while the more successful individual researchers have been content to remain outside the bureaus. But these considerations cannot entirely explain the decline in

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*Calendar year in which proposal was submitted.

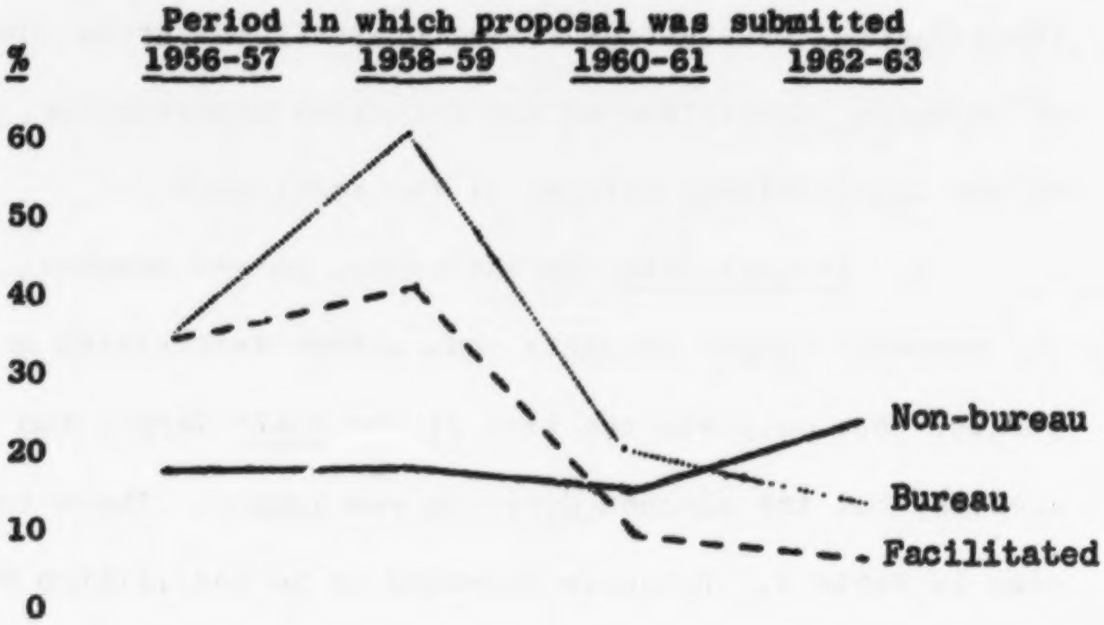
Table 2

Annual Approval Rates by Type of Project*

Type of project	Period in which proposal was submitted			
	1956-57	1958-59	1960-61	1962-63
Bureau	33% (10)	60% (10)	19% (21)	13% (23)
Facilitated	33% (6)	40% (10)	13% (31)	10% (20)
Non-bureau	18% (60)	18% (58)	17% (86)	21% (87)

Figure 2

Annual Approval Rates by Type of Project



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*The numbers in the parentheses are the bases of the per cents, i.e., the total number of proposals submitted in that category. which fell into our sample.

the approval rates for bureau and facilitated projects, for this trend has been much stronger than the increase in submissions.

Looking at the entire period since 1956, we note that bureau proposals had a slightly better chance of approval. Twenty-seven per cent of the bureau proposals and 22 per cent of the facilitated proposals were successfully financed, compared with 20 per cent of the non-bureau proposals. As already pointed out, these differences were much larger prior to 1960. In fact, in more recent years, the approval rate for non-bureau projects has exceeded the rate for bureau projects.

A. Specific Comparisons Between Bureau, Facilitated and Non-bureau Projects

A number of differences emerge among the three types of projects. In the following discussion, we shall present data concerning the size of the projects, substantive research areas, the group investigated, methods of research, discipline of the principal investigator, and several features of the institutional setting of the applicants.

1. Project size. On the whole, bureau proposals contained plans for somewhat larger projects than either facilitated or non-bureau proposals. Not only was the size of the staff larger and the amount of funds greater, but the planned duration was longer. These comparisons can be seen in Table 3. Projects intended to be facilitated by bureaus more closely resembled the size of bureau than of non-bureau projects.

Since bureau projects enjoyed a higher approval rate overall, it is plain that the greater magnitude of these projects has not affected their chances of receiving support. This fact can be seen clearly in Table 4, which sets forth the approval rates for the three types of projects

Table 3

Amount of Funds Requested, Size of Staff, and Planned Duration, by Type of Project

Amount requested (000's)	Bureau		Facilitated		Non-bureau	
$ 0 - 24	33%	48%	22%	53%	36%	61%
$ 25 - 49	15		31		25	
$ 50 - 99	37		22		26	
$100 - or more	26		24		13	
N	(62)		(67)		(289)*	
Full-time equivalent of professional staff						
½ time	5%	23%	--%	29%	6%	35%
1 - 1½	18		29		29	
2 - 2½	32		28		34	
3 - 3½	22		12		14	
4 or more	23		31		17	
N	(60)		(65)		(282)*	
Duration of project						
Up to 1 year	15%	51%	15%	48%	20%	61%
1 to 2 years	36		33		41	
2 to 3 years	20		36		20	
3 to 4 years	12		10		12	
More than 4 years	17		6		8	
N	(64)		(67)		(292)*	

*Bases of percentages vary because projects which were not ascertainable with respect to amount requested, staff, or duration were eliminated.

Table 4

Approval Rates According to Amount of Funds Requested, Size of Staff, and Duration, by Type of Project*

Amount requested (000's)	Bureau	Facilitated	Non-bureau
$ 0 - 24	36% (14)	53% (15)	24% (106)
$ 25 - 49	22% (9)	19% (21)	18% (101)
$ 50 - 99	22% (23)	13% (15)	18% (112)
$100 or more	20% (15)	--% (16)	11% (38)
Full-time equivalent of professional staff			
½ time	33% (3)	(--)	0% (17)
1 - 1½	27% (11)	21% (19)	15% (81)
2 - 2½	32% (19)	33% (18)	21% (95)
3 - 3½	8% (13)	25% (8)	39% (41)
4 or more	21% (14)	5% (20)	19% (48)
Duration of project			
Up to 1 year	22% (9)	20% (10)	23% (57)
1 to 2 years	26% (23)	32% (22)	21% (117)
2 to 3 years	23% (13)	17% (24)	24% (58)
More than 3 years	26% (19)	9% (11)	12% (60)

*Numbers in parentheses are the bases of per cents, i.e., the total number of proposals submitted in that category.

according to three measures of magnitude. Within most categories of size, bureaus maintained their advantage over non-bureau projects. The only exception concerns the duration of the projects. With respect to duration, it appears that only those bureau projects which planned to continue for more than three years had a better chance of approval than non-bureau projects of comparable length.

While it is true that larger projects were less often approved than smaller ones, regardless of the source of the proposal, it seems that the larger facilitated projects were especially prone to be rejected. For example, none of the 16 facilitated projects in our sample which requested $100,000 or more were approved, while more than half of those which requested less than $25,000 were approved. Since facilitated projects tended to be larger than non-bureau projects, it may be that this type of study is at a particular disadvantage because of size, for the limited bureau facilities which these projects have intended to use may not have justified their larger scale. If this interpretation is correct, then it would seem that larger projects should be located within bureaus rather than being only facilitated by them.

2. Substantive areas of research. Only small differences are found between the three types of projects according to specific substantive areas (see Table 5). But if we group selected areas into what might be labeled as "traditional" and "contemporary" categories, an interesting difference emerges between bureau and non-bureau projects (Table 6, below). Non-bureau projects more often posed research in the "traditional" areas of curriculum, instruction, and student achievement. Thirty-one per cent of the non-bureau applicants and 29 per cent of the

Table 5

Specific Substantive Areas by Type of Project

Topics	Bureau	Facilitated	Non-bureau
[Instructional methods	6%	12%	13%
[Curriculum	5	8	11
[Achievement	2	9	7
Allocation of resources	11	12	4
[Administrative behavior	11	9	6
[Talent; creativity	8	1.5	4
[Remedial education	6	6	3
Psychology of learning, motivation, etc.	16	9	16
Mentally retarded	5	11	8
Social problems (drop-outs race relations, etc.)	5	8	7
Profession of education	5	1.5	7
Social relations	6	1.5	3
Tests, measurements	3	1.5	3
Normal skills (hearing, sight, reading)	5	3	1
Career choice	--	3	2
Guidance, therapy	--	1.5	2
Physical education	2	--	1
Educational research	3	1.5	1
College admission	2	1.5	--
Philosophy, history of education	--	--	1
	101%	100%	100%
N	(63)	(66)	(291)
Not ascertainable	(1)	(1)	(1)

facilitated applicants focussed on these three areas combined, while only 13 per cent of the bureau applicants did so. (See Table 6 below)

Table 6

Submission and Approval Rates: "Traditional" and "Contemporary" Topics, by Type of Project

	Contemporary			Traditional		
	Bureau	Facilitated	Non-bureau	Bureau	Facilitated	Non-bureau
Submissions	25%	17%	13%	13%	29%	31%
Approved	25% (16)	27% (11)	13% (40)	0% (8)	10% (19)	17% (82)

Proposals for bureau projects, on the other hand, were better represented in the three categories of administrative behavior, remedial students, and talented students, or what might be considered as more "contemporary" subjects. Twenty-five per cent of the bureau proposals were concerned with these topics, compared with 17 per cent of the facilitated projects, and only 13 per cent of the non-bureau projects. Since facilitated projects fall between the other two types, it may be that the closer the affiliation with bureaus, the greater the likelihood of posing research on these more "up to date" topics.

The approval rates for each type of project seems also to be related to whether the topic was more or less traditional. Bureau and facilitated projects in the three contemporary areas mentioned above were twice as likely to be approved as were non-bureau projects in these areas. The converse was true with respect to the more traditional areas, in which non-bureau projects were more likely to be approved. These comparisons can also be seen in Table 6.

One might conclude that there is something like a division of labor between bureau and non-bureau projects according to more or less traditional areas of research. For not only have bureaus more often submitted proposals on less traditional topics of research, but the quality of their proposals on these topics seems to have been higher, judging from approval rates.

There is one highly traditional area, however, in which bureaus slightly more often proposed research: the allocation of non-human resources, which includes such topics as school finances and physical facilities. Eleven per cent of the bureau projects and 12 per cent of the facilitated projects proposed research in this general area, compared with 4 per cent of the non-bureau researchers. Small as this difference is, it probably reflects a tendency for the service activities of some bureaus to invade their research plans. That the bureau projects in this area were indeed judged to be service studies is suggested by the fact that none of the bureau proposals in our sample which dealt with these topics were approved. In contrast, a quarter of the facilitated projects and a fifth of the non-bureau projects in this area were supported.

3. The level of education to be studied. There were only slight differences between the three types of projects with respect to whether higher education or public school education was investigated. The percentages of proposals to study some aspect of higher education were as follows: bureau, 23%; facilitated, 14%; non-bureau, 18%. Overall, 18 per cent of the proposals focussed on higher education, 17 per cent of which proposals were approved.

4. The group to be studied. Closely related to the substantive interests of a project is the human group which serves as the object of study. As we would expect from our previous observations, bureau applicants more often proposed studies of school administrators, and less often proposed studies of students. This difference, which can be seen in Table 7, follows the distinction which we have made between more and less traditional topics. (The larger proportion of projects which were unclassifiable according to the human group under investigation were mostly concerned with resources or innovations which might affect a variety of groups.)

Another group which research units more often proposed for investigation reinforces our observation that bureaus are more concerned with research which has been relatively neglected. This group is the community, which here includes both national and local publics. The extent to which studies of educational contexts are neglected by educational researchers is shown by the fact that only 7 per cent of all the proposals in our sample sought to investigate this topic. By contrast, 80 per cent sought to study students. But 17 per cent of the bureau proposals were interested in studying the community, compared with only 8 per cent of the facilitated projects and 5 per cent of the non-bureau proposals.

This difference no doubt reflects the special capabilities of research units for conducting community studies. The small scale experiments which have characterized investigations of students do not require a large staff and other organizational resources, while community studies do require such resources. This explanation is borne out by two additional observations.

Table 7

The Group Studied, by Type of Project

	Bureau	Facilitated	Non-bureau
Students	70%	90%	79%
Faculty	13	8	16
Community, parents	17	8	5
Administrators	13	5	2
Guidance counselors	--	3	4
School boards	--	-	1
Pre-school children	3	--	2
	116%*	115%*	109%*
N	(30)	(37)	(156)
Not ascertainable or not applicable	(34)	(30)	(136)

*Total percentages exceed 100% because some proposals planned to study more than one group.

In the first place, the bureau applicants who planned to study the community enjoyed a much higher approval rate than the two other types of applicants. The approval rates have been as follows: bureaus, 60 per cent; facilitated projects, 0 per cent; and non-bureau projects, 13 per cent. This is the largest difference in approval rates which we have noted thus far, and strongly suggests that research units are far better qualified to study the context of education because of their special resources.

A second, more direct way of confirming our explanation that bureaus are specially qualified for community studies is to look at the research methods employed by the different types of projects.

5. Methods of research. Information about research methods was gathered only for approved projects, and in a number of cases it was impossible to determine the exact method. But bearing these limitations in mind, several observations seem warranted.

Bureau and facilitated projects utilized survey techniques more often than non-bureau projects, and used experiments less often, as can be seen in Table 8. Only 27 per cent of the approved non-bureau projects involved surveys, compared with 40 per cent of the facilitated projects and 36 per cent of the bureau projects; and 48 per cent of the non-bureau projects used experiments, compared with 27 per cent of the bureau projects. Facilitated projects used experiments most frequently, however, as 60 per cent of these projects incorporated this method. Also, bureau projects less often administered tests. While 64 per cent of the bureau projects used tests, 85 per cent of the non-bureaus projects did so.

6. Discipline of the principal investigator. The major difference among the three types of projects with respect to the investigator's academic discipline follows some of the contrasts which we have already mentioned. As shown in Table 9, social scientists were better represented by bureau proposals, as we would expect from the bureau's greater attention to studies of school administrators and of the context of education. Nineteen per cent of the bureau proposals were submitted by social scientists, compared with 11 per cent of the proposals for facilitated projects, and 8 per cent of the non-bureau proposals. Non-bureau proposals, on the other hand, were more often submitted by psychologists, although the difference here is smaller than in the case of social scientists.

7. Features of the institutional setting. Three features of the larger setting of the applicants were examined: (a) the level and control of the institution, (b) the overall quality of the institution, and (c) the division of the institution in which the applicant was located (i.e., inside or outside education).

(a) Type of institution (level and control). As can be seen in Table 10, bureau and facilitated projects more often originated in universities rather than in colleges. About nine out of ten bureau and facilitated projects came from universities, compared with two out of three non-bureau projects. (We were unable to ascertain whether the principal investigator was himself located at the graduate or the undergraduate level within the universities. Thus, there are probably a number of proposals from college professors classified with the university projects.)

Table 8

Research Methods by Type of Project
(Approved projects only)

Method	Bureau	Facilitated	Non-bureau
Tests	64%	60%	85%
Experiment	27	60	48
Social survey	36	40	27
Observation	27	--	15
Sociometry	--	--	9
Documentary analysis	9	10	3
Secondary analysis	9	--	--
Content analysis	--	--	3
	172%	170%	190%
N	(11)	(10)	(33)
Not ascertainable	(5)	(4)	(25)

Table 9

Discipline of the Principal Investigator, by Type of Project

Discipline	Bureau	Facilitated	Non-bureau
Education	17%	12%	18%
Educational psychology	7	11	12
Other psychology	17	20	19
Special education	17	11	12
Social science	19	11	8
Language arts	3	6	7
Educational administration	2	9	5
Educational research; statistics	7	5	2
All other	16	16	16
	100%	100%	100%
N	(61)	(65)	(287)
Not ascertainable	(3)	(2)	(5)

Table 10

Level and Control of Institution by Type of Project

Level and control	Bureau	Facilitated	Non-bureau
State university	63%	61%	44%
Private university	28	25	21
Teachers colleges	2	--	5
Other colleges	7	5	22
Special schools	--	2	1
School systems	--	8	7
	100%	100%	100%
N	(60)	(65)	(283)
Not ascertainable	(4)	(2)	(9)

Table 11

Approval Rates According to Level and Control of Institution, by Type of Project *

Type of institution	Bureau	Facilitated	Non-bureau
State university	29% (38)	25% (40)	23% (124)
Private university	29% (17)	13% (16)	33% (59)
Teachers colleges	0% (1)	(--)	8% (13)
Other colleges	0% (4)	33% (3)	16% (61)
Special schools	(--)	0% (1)	0% (2)
School systems	(--)	20% (5)	13% (24)

*Numbers in parentheses are the bases of per cents, i.e., the total number of proposals submitted in that category.

Since proposals from universities have enjoyed a substantially higher approval rate than those from colleges, it is possible that the higher overall approval rate for bureau proposals is explained by their more frequent university origin. In Table 11, however, we see that if this is the case, it is true only for _private_ universities, since the difference between bureau and non-bureau approval rates disappears when we look at the private universities only. This is not the case among the public universities, however; and since it is in the public universities that bureau proposals much more often originated, the fact that bureaus are more often found in universities cannot explain their higher overall approval rate.

(b) _Quality of the institution_. Our measure of school quality follows the classification of colleges and universities used by Berelson in _Graduate Education in the United States_.* In Table 12 it can be seen that bureau proposals more often originated in the _highest quality_ schools. Twenty-three per cent of the bureau proposals compared with 16 per cent of the non-bureau proposals came from these schools. Further, non-bureau proposals more often originated in schools which were not included in Berelson's classification, presumably because of their obscurity, and in teachers colleges. Thus, applicants from research units seem to be located in better schools than non-bureau applicants.

The relationship between school quality and approval rates is particularly interesting to observe, since we may assume that the two variables are measuring approximately the same thing. If we ignore the category of unclassified schools, and if we dichotomize Berelson's scale into "better" and "poorer" schools because of the small number of cases available for computing approval rates, we find that the relationship between school quality and approval is especially marked among bureau and facilitated projects. This can be seen in Table 13. Thirty-six per cent of the bureau projects which originated in the better schools were approved, compared with 21 per cent from the poorer schools. The percentage difference among facilitated projects is the same, although the approval rates are lower than for bureau projects. When we look at non-bureau projects, on the other hand, we see that the relationship between school quality and approval virtually disappears: 21 per cent from the better schools were approved, as were 18 per cent from the poorer schools.

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* Bernard Berelson, _Graduate Education in the United States_, New York: McGraw-Hill Book Company, Inc., 1960. See pp. 280-281 for listing of institutions according to quality. The classification was adopted from Hayward Keniston, _Graduate Study and Research in the Arts and Sciences_, University of Pennsylvania Press, 1959.

This difference between bureau and non-bureau projects may be explained by the closer connection between bureaus and their institutional context. Since bureaus are part of the organizational structure of the school, the quality of bureau research may more often reflect the resources and perspectives of the institution as a whole. The research of individuals outside of bureaus, on the other hand, may be less dependent upon administrative sanctions, and therefore more *in*dependent of the climate of the larger institution.

(c) Education versus other divisions in the institution. When we classify the proposals according to whether the applicant was associated with a school, department, or college of education, as distinguished from academic or professional departments, we find only negligible differences

Table 12

Quality of Institution (Berelson Scale) by Type of Project

	Bureau	Facilitated	Non-bureau
Top liberal arts colleges and universities	23%	23%	16%
Middle colleges and universities	8	10	9
Other colleges and AGS universities	25	18	28
Other universities (Berelson's other)	22	28	23
All other institutions	12	20	25
	100%	99%	101%
N	(60)	(60)	(262)
Not ascertainable or not applicable	(4)	(7)	(30)

Table 13

Approval Rates of Better and Poorer Institutions (Berelson Scale), by Type of Project*

Quality	Bureau	Facilitated	Non-bureau
Better	36% (25)	25% (20)	21% (66)
Poorer	21% (28)	11% (28)	18% (131)

*Projects proposed by state and city departments of research are omitted from this table. Numbers in parentheses are the bases of percents, i.e., the total number of proposals submitted in that category.

between the three types of projects with respect to affiliation with bureaus. This can be observed in Table 14. In brief, it appears that research units are no more likely to be found in education divisions than elsewhere.

But when we look at approval rates (Table 15), we find that units which are affiliated with non-education departments in the school have a noticeably higher rate of approval than either facilitated or non-bureau projects which originated in the same place. This suggests that it is the better researchers in the liberal arts and science divisions who have become associated with bureaus, but not so in education departments; for the same proportion of bureau, facilitated, and non-bureau projects originating in education departments were approved (21 per cent). One might tentatively conclude that the quality of educational research bureaus is somewhat poorer than the quality of other bureaus elsewhere in the institutions due to the differential selection of personnel with superior research skills.

B. Some case observations

There were five institutions which were represented by at least ten proposals in our sample. (Since we utilized a sample of 20 per cent of all proposals, each of these schools submitted roughly at least 50 proposals.) A close look at these institutions tends to highlight some of the observations which we have already made on the basis of statistics for the entire sample.

In the first place, all of the five institutions are state universities located in the mid-west. Secondly, according to a survey

Table 14

Location of Principal Investigator by Type of Project

	Bureau	Facilitated	Non-bureau
Education school or department	55%	45%	50%
Outside education, but in university or college	40	46	38
Both education and non-education	2	--	2
All other (outside university or college)	3	9	10
	100%	100%	100%
N	(62)	(65)	(287)
Not ascertainable	(2)	(2)	(5)

Table 15

Approval Rates According to Location of Principal Investigator, by Type of Project*

	Bureau	Facilitated	Non-bureau
Education school or department	21% (34)	21% (29)	21% (141)
Outside education, but in university or college	32% (25)	17% (30)	19% (108)
Both education and non-education	100% (1)	-- (--)	33% (9)
All other (outside university or college)	0% (2)	17% (6)	7% (29)

*Numbers in parentheses are bases of per cents, i.e, the total number of proposals submitted in that category.

conducted in 1963, they all contain organizational facilities for research: all have educational research bureaus, four have educational research coordinators, and three have educational research committees (from our survey of deans). Finally, the two universities with the highest approval rates (54% and 31%) have the largest number of education bureaus (8 and 7, respectively). The university with the lowest approval rate of the five (17%) is the only one which has only a single educational bureau, and also the only one which does not have a research coordinator for the faculty of education. Despite this low level of organizational development, however, this state university has submitted about the same number of proposals to the Office of Education as each of the other four institutions.

These facts concerning the five schools strongly suggest the important role which is played by organizational resources in raising the quality of educational research.

II. The Institutional Setting -- Education Compared with Other Departments

The second way in which the proposals were classified was according to whether the proponent was affiliated with (1) a school of education, (2) another school or department in the university or college, (3) both a school of education and another department (in the case of two principal investigators) or (4) an agency which was outside of any institution of higher learning.* Since it is often observed that the research programs found in schools of education differ markedly from the orientations of other departments, it seemed worthwhile to find out if these alleged differences are reflected in the proposals submitted by individuals in the two settings. In the discussion that follows, we shall take up each of the features mentioned in our discussion of affiliation with research bureaus. But first, we should note some extremely interesting trends over the years in the number of proposals submitted by individuals in the respective settings, and in the approval rates of these proposals.

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*Because of the small number of cases in these latter two categories (13 and 38), they are omitted from most of the tables that follow. Seven administrative officers in universities were also placed in this residual category.)

Over the entire eight-year period, 49 per cent of the proposals were submitted by educators and 39 per cent by non-educators in the universities and colleges. Only 3 per cent were submitted by teams which combined educators and non-educators as principal investigators. (Nine per cent originated with individuals outside of the universities.) Overall, then, the proportion of educators did not excell the proportion of non-educators to any great extent.

But what seems quite significant is the fact that submissions from educators decreased from 66 per cent of all proposals in 1956-57 to 40 per cent in 1962-63; while submissions from non-educators increased from 22 per cent to 46 per cent in the same period. These trends can be seen in Table 16a. In the more recent years, therefore, the proportion of educators exceeded the proportion of non-educators.

Further, if we look at the absolute numbers of proposals submitted by the two groups of applicants (Table 16b), it becomes plain that the number submitted by educators remained pretty stable, while the number from non-educators increased sharply -- almost four-fold. These figures eloquently express the rising interest on the part of non-educators in conducting research related to education. The stability in the number of

Table 16a

Annual Submissions by Location of Principal Investigator (Per cents)

Location	Calendar years in which proposals were submitted			
	1956-57	1958-59	1960-61	1962-63
Education	66%	61%	43%	40%
Not education	22	28	46	46
Both of above	--	3	4	4
Outside higher education	12	8	7	10
	100%	100%	100%	100%
N	(76)	(74)	(141)	(134)

Table 16b

Annual Submissions by Location of Principal Investigator (numbers)

Location	Calender years in which proposals were submitted			
	1956-57	1958-59	1960-61	1962-63
Education	50	45	60	54
Not education	17	21	65	62
Both of above	--	2	6	5
Outside higher education	9	6	10	13
N	76	74	141	134

proposals originating with educators is puzzling, however, in view of renewed efforts in recent years to promote research in schools of education.

Turning our attention now to approval rates in the two groups of applicants, we find that the rates are the same (20 per cent of educators' proposals and 21 per cent of non-educators' proposals were approved). Moreover, there is no clear-cut trend in the direction of increasing or decreasing support for either of the two groups (Figure 3).

In order to see whether the disciplinary composition of the nine-man Advisory Committee was related to approval rates, the members were classified according to whether or not they were professional educators. Figure 4 shows (1) the proportion of non-educators on the Committee, indicated at the mid-point of each fiscal year, (2) the proportion of proposals submitted by non-educators which were approved, indicated at the mid-point of each calendar year in which the proposal was submitted, and (3) the proportion of all the proposals from universities and colleges which were submitted by non-educators, again indicated at the mid-point of each calendar year of submission.

It can be seen that a reasonably high relationship exists between the changing composition of the Committee and the proportion of non-educators who were approved. Further, the consistency with which a shift in the composition of the Committee in a given fiscal year preceded a corresponding shift in the approval rates strongly suggests the influence of the Committee's composition.

It is of further interest that although the number of proposals from non-educators exceeded the number from educators in the more recent years, the non-educators on the Research Advisory Committee remained in the minority. This can also be seen in Figure 4.

Figure 3

Approval Rates of Educators and Non-educators According to Year of Submission

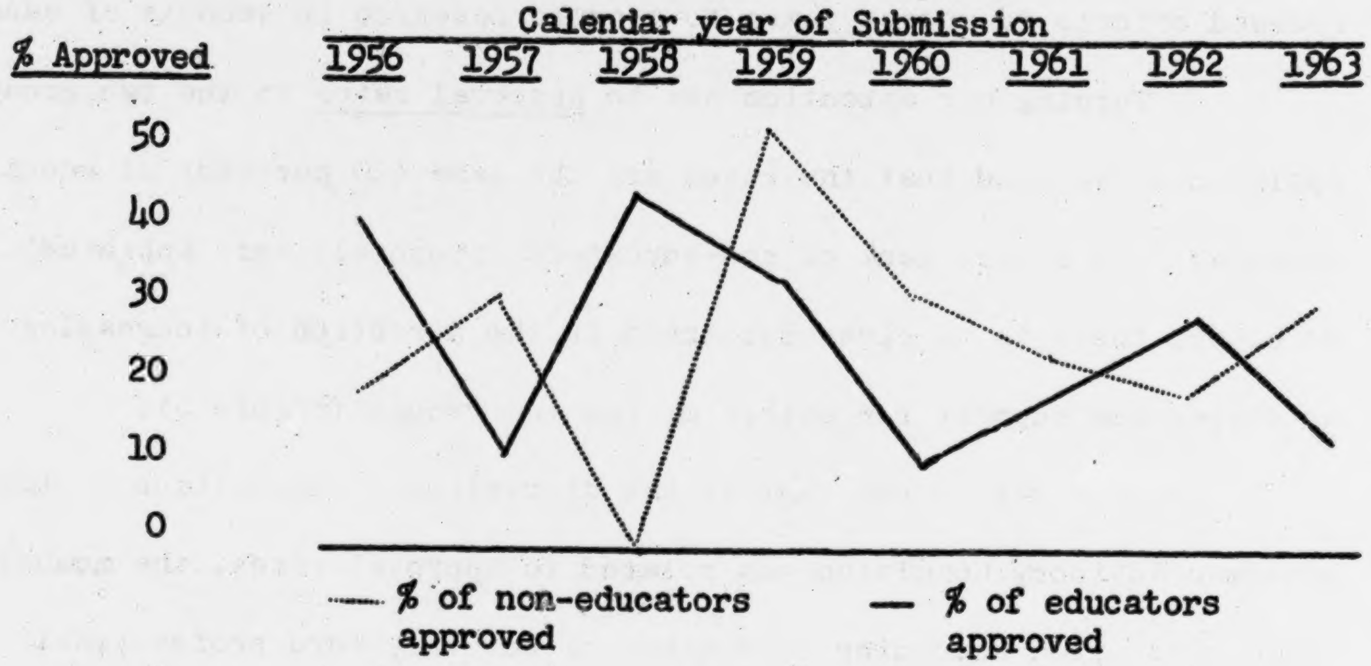
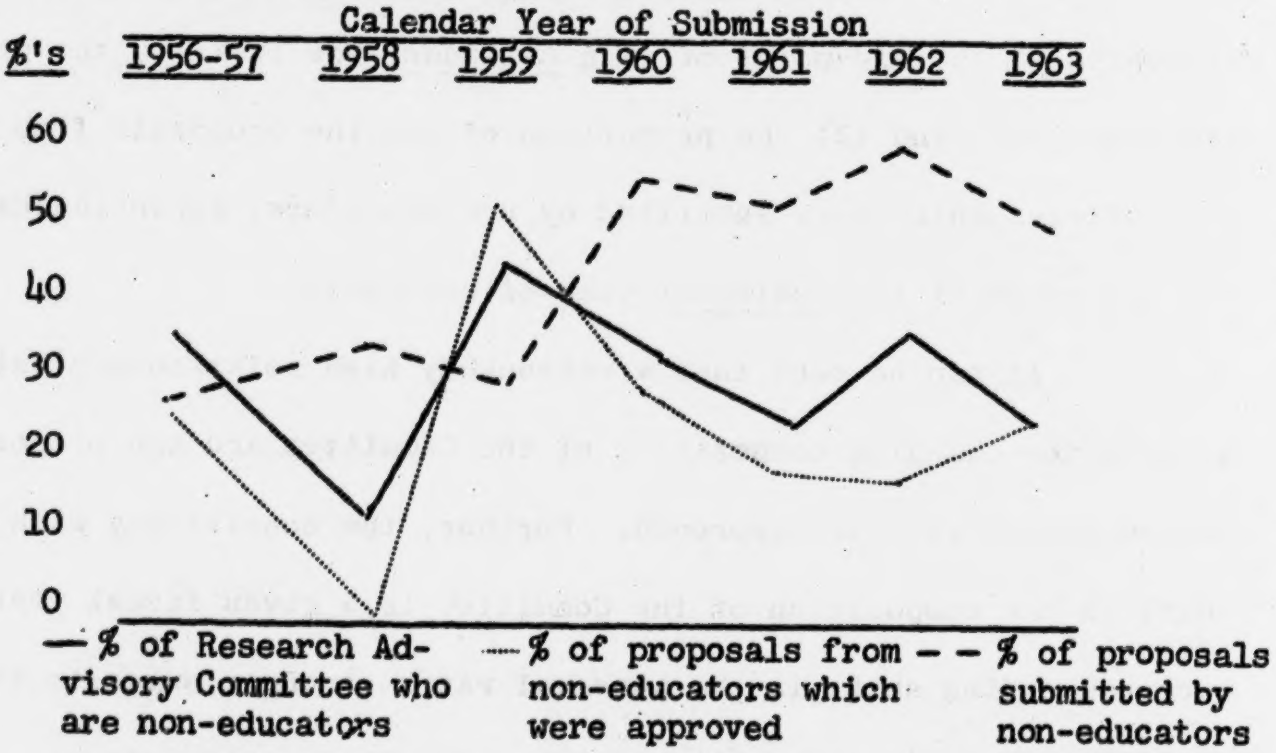


Figure 4

Composition of Research Advisory Committee, Approval Rates of Non-educators, and Submission Rates of Non-educators, by Year



	% or Research Advisory Committee who were non-educators (fiscal year)	% of non-educators' proposals approved (calendar year)	% of proposals from institutions submited by non-educators (calendar year)
1956-57	33%	24%	25%
1958	11%	0%	33%
1959	45%	50%	30%
1960	33%	29%	53%
1961	22%	17%	51%
1962	33%	15%	58%
1963	22%	22%	47%

We shall now turn our attention to the differences between the projects which were submitted by educators and non-educators over the entire period.

1. Project size. The projects proposed by educators were slightly larger in terms of the amount of funds requested and the size of the professional staff, but the planned duration of the two types of projects were roughly the same. The pertinent comparisons are shown in Table 17. The observed differences, incidentally, are not nearly as large as when the projects are classified according to affiliation with bureaus (see p.A-9, Table 3).

2. Substantive areas of research. Again, only negligible differences emerge between educators and non-educators when the proposals are examined according to specific substantive areas (Table 18). Nor are there any clear-cut differences by "traditional" or "contemporary" areas, as these were earlier defined.

The absence of distinctive substantive areas in which educators as contrasted with non-educators posed research is rather surprising, since we would expect the liberal arts professors to have focussed on more basic areas, such as the psychology of learning, and the educators to have focussed on more practical issues, such as the testing of curricula or instructional methods. Non-educators did somewhat more often plan studies in the general field of the psychology of learning (18% vs 12%), but the two groups were equally active in the areas of curriculum and instruction. Perhaps our classification of substantive areas failed to distinguish properly between pure and more applied research. In any case, the absence of differences in the substantive areas proposed for research is rather puzzling.

Table 17

Amount of Funds Requested, Size of Staff and Planned Duration, by Location of Principal Investigator

		Location	
Amount requested (000's)		**Education**	**Not education**
$ 0 - 24		35%	32%
$ 25 - 49		21	27
$ 50 - 99		28	25
$100 or more		16	16
		100%	100%
	N	(205)	(165)*
Full-time equivalent of professional staff			
½ time		6%	5%
1 - 1½		24	32
2 - 2½		34	34
3 - 3½		19	9
4 or more		17	20
		100%	100%
	N	(198)	(163)*
Duration of project			
up to 1 year		20%	18%
1 to 2 years		35	41
2 to 3 years		22	21
3 to 4 years		14	11
More than 4 years		9	10
		100%	100%
	N	(209)	(165)*

***Bases of percentages vary because projects which were not ascertainable with respect to amount requested, staff, or duation were eliminated.**

Table 18

Specific Substantive Areas by Location of Principal Investigator

Topics	Location	
	Education	Not education
Instructional methods	11%	14%
Curriculum	9	10
Achievement	3	7
Allocation of resources	6	7
Administrative behavior	7	7
Talent; creativity	7	2
Remedial education	3	6
Psychology of learning; motivation, etc.	12	18
Mentally retarded	11	5
Social problems (drop-outs race relations, etc.)	9	4
Profession of education	9	2
Social relations	3	3
Tests, measurements	3	2
Normal skills (hearing, sight, reading)	2	2
Career choice	1	5
Guidance, therapy	2	1
Physical education	2	1
Educational research	1	2
College admission	--	1
Philosophy, history of education	--	1
	101%	100%
N	(208)	(164)
Not ascertainable	(1)	(1)

3. The level of education to be studied. The only difference between the two types of settings with respect to the level of education that the applicants proposed to study was in higher education. Only 7 per cent of the educators proposed research on higher education, compared with 21 per cent of the non-educators. The educators who proposed work in this field were more likely to be approved, however: 30% of the educators' proposals compared with 14% of the non-educators' proposals were approved.*

4. The group which is studied. No differences were noticed with respect to the human group which was to be studied, i.e., students, faculty, the public, etc.

5. Methods of research. So far we have found few, if any, interesting differences between the projects submitted by educators and non-educators. When we turn our attention to the research methods which were involved in the projects, however, we are struck by several contrasts.** Educators were more likely to use the experimental method, observation, and tests. Non-educators were considerably more likely to use a survey and slightly more likely to use sociometry. Table 19 shows the relevant percentages.

It is not surprising that educators less often used the survey method since training seems to be given only in the most rudimentary aspects of this technique. By and large, educators tend to view surveys as descriptive devices to be used in studies of school facilities and staff

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*These percentages represent 3 out of 10 educators' proposals and 3 out of 22 non-educators' proposals which were approved.

**Our observations are here based on approved proposals only since this information was not gathered for all proposals ever submitted.

Table 19

Research Methods by Location of Principal Investigator (Approved projects only)

	Location	
	Education	Not education
Test	79%	65%
Experiment	52	35
Social survey	24	40
Observation	17	5
Sociometry	3	10
Documentary analysis	7	5
Secondary analysis	--	5
Content analysis	3	--
	185%*	165%*
N	(29)	(20)
Not ascertainable	(15)	(14)

*Total percentages exceed 100% because more than one method was used in most cases.

characteristics. On the other hand, the experimental method has a long tradition in the field of educational research, and has arisen from the essentially psychological orientation toward educational problems which is commonly found in schools of education. Testing, of course, is frequently done in conjunction with experiments; hence, educators also more often administered tests.

6. Discipline of the principal investigator. The distribution of disciplines represented by the proposals is shown in Table 20. It is interesting that a smaller proportion of psychologists come from the ranks of educators than from among non-educators, despite the large number of psychologists in schools of education. Twenty-seven per cent of the educators were psychologists, compared with 38 per cent of the non-educators. But a much greater discrepancy emerges when we look at the social sciences. Only 2 per cent of the educators who submitted proposals were social scientists, compared with 22 per cent of the non-educators.

By comparing the proportion of proposals from educators in the various disciplines with the proportion of doctorates awarded in each field in the recent past, we can gain an approximate notion of the fields in which more or less research is being undertaken than one would expect on the basis of the number of doctorates produced. Table 21 presents the pertinent comparisons. This table supports some common impressions of the areas where the production of doctorates is disproportionate to the amount of research activity in the area. In the first place, there was considerably less research proposed in the area of administration than the production of doctorates would lead one to expect. The reason

Table 20

Discipline of the Principal Investigator by Location

Discipline	Location Education	Location Not education
Education	30%	2%
Educational psychology	17	5
Other psychology	10	33
Special education and guidance	13	9
Social sciences	2	22
Language arts	3	11
Educational administration	6	1
Educational research methodology	5	--
All other	19	16
	100%	100%
N	(206)	(160)
No answer	(3)	(5)

Table 21

Proportion of Doctorates Awarded by Schools of Education (1957) and Proportion of Proposals Submitted by Educators (1956-63), According to Selected Educational Fields

Educational Fields	% doctorates awarded in 1957*	% proposals submitted in 1956-63
School administration	31%	6%
Guidance and counseling	13	2
Psychology	10	27
Elementary education	7	2
Social science, history, philosophy	5	2
Special education	2	11
Educational research	2	5
Physical education	2	3
Science and math education	2	2
All other (non-comparable)	26	40
	100%	100%
N	(838)	(206)

*Source: The Doctorate in Education, Vol. 2; Washington, D.C.: The American Association of Colleges for Teacher Education, 1960, p. 69.

for this is undoubtedly the fact that doctoral recipients in school administration tend to become practitioners rather than scholars. The same observation may be made of the field of guidance and counseling where the proportion of doctorates is six times greater than the proportion of research proposals.

When we come to the field of psychology, we find the reverse situation. Although only 10 per cent of the doctorates in education in 1957 were given in educational psychology or child development, 27 per cent of the proposals for research originated with psychologists affiliated with departments of education. Relatively speaking, then, we might say that psychologists overproduced research studies. While the same could be said for the field of special education, the reason for the discrepancy in this latter field is clear. In the early years of the Cooperative Research Program, particular emphasis was placed on studying mental retardation by the Office of Education. Although a number of psychologists were also among those who submitted projects on mental retardation, the discrepancy between percentage of doctoral degrees and percentage of proposals from psychologists (difference of 17%) is larger than the percentage of all proposals concerning mental retardation (8%). Hence, the program on mental retardation cannot explain the greater percentage of proposals from psychologists.

The "overproduction" of research proposals by psychologists is especially striking when we compare the field of psychology with the fields of social science, history, and philosophy combined. Five per cent of the doctorates in 1957 were awarded in these fields, but only 2 per cent of the applicants to the CRP identified themselves as specializing in these fields. Whether we can take the 3 per cent difference seriously is not the point; the interesting result is that these fields do not begin to approach the "overproduction" of research proposals found in the field of psychology. And yet, just as in the field of psychology, doctoral recipients in these fields tend to become professors rather than public school employees.

These findings point to the strong tradition in educational research favoring psychological approaches. Research on administration and on guidance and counseling probably suffers from the loss of personnel to school systems; while research on the social, historical, and philosophical aspects of education has been neglected because of the tendency to look at education in psychological terms.

7. Features of the institutional setting.

(a) Type of institution (level and control). Differences between educators and non-educators according to the level and control of the institution with which they are affiliated are small. The only clear-cut difference has to do with the type of control. Sixty per cent of the educators' proposals originated in state universities, compared with 50 per cent of the non-educators' proposals (see Table 22). This does not necessarily mean that educators in public institutions are more likely to do research, for it is probable that a larger proportion of the faculty in public universities is composed of educators. Thus, applications for projects from state universities might simply reflect the size of the faculty of education in these universities.

Since educators in public universities were no more likely to have their projects approved than were non-educators (24% vs 21%), but

Table 22

Level and Control of Institution by Location of Principal Investigator

Level and control	Education	Non education
State university	57%	50%
Private university	21	28
Teachers colleges	6	--
Other colleges	16	20
Special schools	--	1
	100%	99%
N	(204)	(157)
Not ascertainable or not applicable	(5)	(8)

Table 23

Approval Rates According to Level and Control of Institution, by Location of Principal Investigator*

Level and control	Location Education	 Non-education
State university	24% (117)	21% (78)
Private university	23% (23)	34% (44)
Teachers colleges	8% (12)	-- (--)
Other colleges	16% (32)	6% (32)
Special schools	-- (--)	0% (1)

*Numbers in parentheses are bases of per cents, i.e., the total number of proposals submitted in that category.

non-educators in private universities were more likely to have their projects approved than were educators (34% vs 23%), it is possible that the private-public dimension is differentially associated with research competence among non-educators only (see Table 23). That is, educators who are better qualified for research may be recruited by either the public or private institutions, while non-educators with similar skills may tend to be recruited by the private institutions. This interpretation is highly tentative, however.

(b) Quality of the institution. While the topic of institutional quality must again be treated with a certain amount of caution, Table 24 suggests that the educators' proposals have more often originated in the better schools. A third of the educators' proposals hailed from schools in the two top categories, compared with about a fourth of the non-educators' proposals. The percentages reverse when we look at the middle group of schools, and remain the same for educators and non-educators in the two bottom groups. (There are no differences between educators' and non-educators approval rates according to the quality of school.)(See Table 25.)

III. Some Observations on Overall Submission and Approval Rates

Several comments can be made on the basis of the marginal distributions alone, quite apart from the differences between bureau and non-bureau research or between educators and non-educators.

Table 24

Quality of Institution (Berelson Scale) by Location of Principal Investigator

Quality	Location Education	 Not education
Top liberal arts colleges and universities	21%	16%
Middle colleges and universities	13	8
Other colleges and AGS universities	20	31
Other universities (Berelson's Other)	24	23
All other institutions	22	22
	100%	100%
N	(204)	(160)
Not ascertainable or not applicable	(5)	(5)

Table 25

Approval Rates of Better and Poorer Institutions (Berelson Scale), by Location of Principal Investigator*

Quality	Location Education	 Non-education
Better	25% (69)	26% (38)
Poorer	20% (135)	19% (122)

*Projects proposed by state and city departments of research are omitted from this table. Numbers in parentheses are bases of per cents, i.e., the total number of proposals submitted in that category.

1. Size of the projects. Table 26 shows that the less expensive projects, and those of shorter duration, more often received support. Also, up to a certain point, the larger the professional staff, the greater the chance of approval. (Beyond that point, which seems to be around 3½ staff members, the likelihood of approval drops sharply.) In general, however, it appears that proposal writers are rewarded for keeping the budget down while enlarging the staff. This cost-accounting factor in the approval of proposals can be seen quite clearly in Table 27. Both budget and staff size play a role in gaining approval, independently of one another. This means that the cheaper the personnel, the greater the likelihood of receiving funds to conduct research. Thus, more than half of the proposals offering three or more staff members at less than $25,000 were funded. Quite obviously, such cost-accounting considerations may bear very little relationship to the scientific potentialities of the proposals. As a matter of fact, they may promote mediocrity. Assuming that salary items are lower on cheaper projects with larger staffs, researchers who can be had cheaply are favored. Or, which seems even worse, part-time research is encouraged in a profession which already suffers from an abundance of marginal workers.

2. The group studied. The great majority of projects submitted to the USOE have been concerned with students (80%). Only small percentages have paid attention to the community (7%), to school administrators (4%), or to guidance counselors (3%). Perhaps most surprising is the fact that only 1% of the projects have planned to study school boards. But even the proportion of proposals concerning the faculty is quite low (14%) (see Table 28).

Table 26

Submissions and Approval Rates: Amount of Funds Requested, Size of Staff, and Planned Duration

Amount requested (000's)	Submissions	Approved**
$ 0 - 24	32%	28% (135)
$ 25 - 49	24	19% (101)
$ 50 - 99	27	18% (112)
$100 or more	17	10% (70)
	100%	
N	(418)*	
Full-time equivalent of professional staff		
½ time	5%	5% (20)
1 - ½	27	17% (111)
2 - 2½	32	24% (132)
3 - 3½	15	31% (62)
4 or more	21	16% (82)
	100%	
N	(407)*	
Duration of project		
Up to 1 year	19%	22% (76)
1 to 2 years	39	23% (162)
2 to 3 years	21	22% (95)
3 to 4 years	13	19% (52)
More than 4 years	8	8% (38)
	100%	
N	(423)*	

*Bases of percentages vary because projects which were not ascertainable with respect to amount requested, staff, or duration were eliminated.

**Numbers in parentheses are bases of per cents, i.e., the total number of proposals submitted in that category.

Table 27

Approval Rates for Research Proposals, According to Amount Requested and Size of Staff
(1956-63)
(% of proposals approved)

Staff size	Amount requested ($000's)		
	0 - 24	25 - 49	50+
½ - 1	18% (77)*	14% (29)	10% (20)
2	36% (39)	29% (35)	16% (56)
3+	54% (13)	22% (27)	17% (89)

*Numbers in parentheses represent the total number of proposals submitted with a particular combination of "amount requested" and "staff size."

Further, *none* of the proposals *in our sample* submitted on school boards or on guidance counselors were approved, and only 11 per cent of those on administrators received support. By contrast, a quarter to a third of the proposals on the public, students, and faculty were approved (see Table 28). As a matter of fact, not only were studies of students most frequently proposed, but they were also most frequently supported. In short, in these years the USOE tended to support research projects having the most traditional object of attention: the students. (As mentioned earlier, 18% of the proposals focussed their attention on higher education. Of these proposals, 17% were approved.)

3. Methods of research. We have already commented on the prevalence of testing as a technique of research. Table 29 shows that three-fourths of the *approved* projects utilized tests. Of course, this result follows from the large proportion of projects which focussed on the student population. Second in order of frequency of usage was the experimental method (46%). Only 32% of the studies used the survey method.

To a certain extent, the methods used reflected the predilection for studying students; but this does not altogether explain the prevalence of certain methods. For example, it is feasible to conduct sociological surveys with secondary students. In sum, certain techniques have served as the traditional mainstays of educational research.

4. Discipline of the principal investigator. We have already noted the preeminence of psychologists in educational research. Table 30 shows that almost a third of the proposals originated with psychologists, while only 10 per cent stemmed from social scientists. A large minority of

Table 28

Submissions and Approval Rates: The Group Studied

	Submissions	Approved
Students	80%	33% (178)
Faculty	14	28% (32)
Community, parents	7	25% (16)
Administrators	4	11% (9)
Guidance counselors	3	0% (7)
School boards	1	0% (2)
Pre-school children	2	0% (4)
	111%*	
N	(223)	
Not ascertainable or not applicable	(200)**	

*Exceeds 100% because some proposals planned to study more than one group.

**Most were concerned with factors which might affect a range of groups.

Table 29

Research Methods -- Approved Projects Only

Tests	76%
Experiment	46
Social survey	32
Observation	15
Sociometry	5
Documentary analysis	5
Secondary analysis	2
Content analysis	2
	183%
N	(54)
Not ascertainable	(34)

*Exceeds 100% because many projects utilized more than one method of research

Table 30

Submissions and Approval Rates: Discipline of Principal Investigator

Discipline	Submissions	Approved
Education	17%	23% (69)
Educational psychology	12	26% (46)
Other psychology	19	32% (78)
Special education	13	25% (52)
Social science	10	22% (41)
Language arts	6	12% (26)
Educational administration	5	0% (21)
Educational research; statistics	3	28% (14)
All other	16	14% (66)
	100%	
N	(413)	
Not ascertainable	(10)	

Table 31

Submissions and Approval Rates: Level and Control of the Institutional Setting

Level and control	Submissions	Approved
State university	49%	24% (202)
Private university	23	28% (92)
Teachers colleges	3	7% (14)
Other colleges	17	10% (68)
Special schools	1	0% (3)
School systems	7	14% (29)
	100%	
N	(408)	
Not ascertainable	(15)	

Table 32

Submissions and Approval Rates: Quality of the Institution (Berleson Scale)

Quality	Submissions	Approved
Top liberal arts colleges and universities	18%	27% (70)
Middle colleges and universities	11	22% (41)
Other colleges and AGS universities	25	18% (97)
Other universities (Berelson's Other)	24	18% (90)
All other institutions	22	26% (84)
	100%	
N	(382)	
Not ascertainable or not applicable	(41)	

proposals were submitted by individuals who simply designated their discipline as "education."

5. Features of the institutional setting. Universities had a higher approval rate than colleges, as can be seen in Table 31. Approximately a fourth of the proposals from state and private universities received support, compared with 7 per cent from teachers colleges and 10 per cent from all other colleges. Agencies outside of institutions of higher education had 14 per cent of their proposals approved. No doubt these figures reflect the distribution of research skill among schools.

But one should take note of the fact that institutions of higher learning with lower ratings in the Berelson index of quality more often submitted proposals. The approval rate, however, was lower for these institutions (see Table 32).

APPENDIX B

Columbia University in the City of New York | *New York 25, N.Y.*

BUREAU OF APPLIED SOCIAL RESEARCH

605 West 115th Street

LETTER AND FORM SENT TO DEANS

In 1961 a small investigation was initiated by sociologists at Columbia University to study educational research bureaus affiliated with graduate programs in education. Your office cooperated in this study by supplying us with the names of research organizations at your institution, which organizations we then surveyed. Owing to the favorable response to our report (to be published as a book in 1964), support has been obtained from the U.S. Office of Education to conduct a second nationwide study. This study will be broader in scope and more detailed than the first.

At this early stage of our study we are interested in identifying the individuals within graduate departments who are in any way responsible for the research activities of the staff. We must therefore ask for your assistance once again. Would you or one of your assistants please examine the enclosed list of research organizations to determine whether we have accurate, up-to-date information; and also supply us with the names of:

> the Coordinator or Director of the entire faculty research program in education, if such a position exists; and
>
> the Chairman of any faculty research committee in education, if such a group exists.

If you are aware of any organization engaged in research on education within your university which is outside the graduate school or department of education (e.g., in the graduate department of psychology or sociology), we would also appreciate your listing this agency at the bottom of the enclosed form.

A stamped, addressed envelope is enclosed for your reply. Thank you very much for your cooperation.

Sincerely yours,

Sam D. Sieber
Project Director

Paul F. Lazarsfeld
Principal Investigator

1.a. Research organizations (Cross out any organizations which are no longer operating)

b. Other research organizations affiliated with the graduate program in education (bureaus, institutes, centers, laboratories, etc.)

2. Director or Coordinator of faculty research: ______________________

Is this person responsible for: (Check one)

the graduate education program only; _____

the entire university program? _____

3. Chairman of committee or council on faculty research: ______________

Is this committee responsible for: (Check one)

the graduate education program only; _____

the entire university program? _____

---

4. Organizations engaged in research on education outside of the graduate school or department of education:

APPENDIX C

TABLE 1

Major Hindrances to Advancement of Educational Research

The following is a list of factors that some people claim have hindered the advancement of educational research. If you think any of these has hindered educational research, place a check in the appropriate box. (Leave blank if you think it has not hindered research.)

Percent mentioning each factor as a major hindrance:	Deans	Coordinators	Unit Directors
Amount of financial support available for research	68%	58%	72%
Amounts of teaching, administrative, and other non-research duties connected with jobs held by people in education	56	81	56
Kinds and amount of organizational provisions for research at universities, school systems, etc.	44	39	56
The quality of research training provided in graduate schools or departments of education	43	58	49
The quality of research techniques and methods used in educational research	26	29	30
Problems chosen for investigation by researchers	18	29	32
Lack of interest in educational research on the part of behavioral scientists outside schools of education	22	26	33
Types of services and studies desired by school systems	15	13	11
Lack of interest in research on the part of administrators of schools or departments of education	24	32	33
Intellectual ability of people doing research in education	10	10	21
Rewards offered potential researchers to serve as speakers, editors, consultants, workshops participants, etc.	9	3	16
Low standards for acceptance of research articles in journals	9	6	13
Lack of recognition and rewards for research accomplishment	18	19	11
Educational philosophies and ideologies of researchers	5	10	16
Needs and interests of publishing companies	5	0	8
Total respondents:	(79)	(31)	(63)

TABLE 2

Graduate Schools of Education Named by Deans and Coordinators as Doing the Best Research

	Number of times mentioned
Stanford	23
Wisconsin	18
Chicago	18
Harvard	17
Illinois	16
Teachers College, Columbia	14
Minnesota	11
U. of Michigan	10
Ohio State	8
California, Berkeley	6
Oklahoma State	4
Syracuse	3
Boston U.	2
State U. of Iowa	2
Pittsburgh	2
Michigan State	2
Ball State	1
Indiana	1
U. of Pennsylvania	1
Southern California	1
Texas	1
Washington U.	1
Number of deans and coordinators replying:	(46)

TABLE 3

Research Quality According to Various Joint Arrangements with the Liberal Arts and Sciences, Controlled by University Reputation (Keniston)

Joint Arrangements		% Schools of Education doing the best research: In best Universities	% Schools of Education doing the best research: In other Universities
Interdisciplinary committees or seminars which are concerned with scholarly issues.			
	Yes	74%(14)	16%(38)
	No	* (1)	0%(22)
Participation of non-education professors in the selection of the faculty of education.			
	Yes	85%(13)	26%(19)
	No	* (2)	2%(41)
Joint *teaching* appointments.			
	Yes	73%(15)	12%(41)
	No	- (0)	5%(19)
Joint *research* appointments.			
	Yes	89% (9)	17%(23)
	No	50% (6)	5%(37)
Visiting professors from other universities for *research*.			
	Yes	83% (6)	20% (15)
	No	67% (9)	7% (45)
Visiting professors from other universities for *teaching*.			
	Yes	67%(12)	11%(28)
	No	* (3)	9%(32)

* Too few cases for percentaging.

TABLE 4

Services Performed by Research Units, According to Proportion of Budget Devoted to Research

	% budget for research		
Services performed for school systems	0-49%	50-89%	90-100%
Help schools evaluate new programs	83%	67%	47%
Supply individual consultants to local schools	83	50	35
Help schools implement new programs	61	44	41
Supply speakers for local school conferences or workshops	50	56	24
Conduct school surveys at the request of local schools	67	28	18
Develop tests for use of classroom teachers in the state or area	11	11	12
Sell or distribute tests to schools	6	--	4
Services performed for university groups			
Advise the education faculty on research problems	56	56	59
Advise faculty members outside of education on research	44	33	53
Conduct service investigations for university officials (not college or education)	58	11	29
Conduct service investigations for college of education	32	17	12
Conduct service investigations for faculty committees	21	6	12
Construct examinations or other evaluative instruments to be used by members of the university staff	17	6	18
Service investigations for the state dept.	37	33	6
Documentation services (recipients unknown)			
Maintain a reference library	50	44	47
Publish a journal, bulletin or newsletter	56	50	35
Prepare bibliographies on educational topics	28	33	29
Number of units:	(18)	(18)	(17)

TABLE 5

Activities on which Unit Directors Spend Most Time, According to Four Styles of Leadership

Activities*	Leadership Styles External Leader	Executive	Intellectual	Intensive Leader
Seeking funds for researchers.	14%	14%	15%	9%
Collecting and disseminating information about financing.	-	15	5	18
Budgeting for the unit as a whole.	-	21	5	-
Allocating outside funds for research.	-	-	-	-
Negotiating with or reporting to funding agencies.	21	7	5	-
Communicating the needs of the research program to administration.	14	14	10	-
Facilitating communications among researchers.	7	14	10	36
Formulating the goals of the unit's research program.	14	21	5	-
Judging the adequacy of proposals.	-	7	15	18
Encouraging researchers not associated to become associated.	-	-	-	-
Handling requests for released time to do research.	-	-	-	-
Encouraging individuals associated with unit to undertake research of interest to scholars in ed.	7	14	5	9
Gaining the assistance of scholars in other departments.	-	21	-	-
Providing facilities for researchers.	-	14	20	-
Assisting staff in writing proposals.	21	7	35	8
Assisting staff with analytical problems which arise in research.	29	21	30	45
Providing opportunities for students to participate in research.	36	-	35	36
Directing or facilitating service studies for schools in area.	36	7	10	27
Handling problems of interpersonal relations among staff members.	7	7	-	-
Number of directors:	(14)	(14)	(20)	(11)

* Respondents were instructed to check "no more than three activities" to which they devoted most of their time.

TABLE 6

Historical Comparison of Activities of University Affiliated Bureaus of Educational Research *

Service Activities	Chapman (1927)	Rosengarten (1936)	Eckert (1949)	Miller (1958)	Lazarsfeld-Sieber (1965)
	N=15	N=15	N=18	N=13	N=61
1. Testing (administration or scoring)	100%, 93%	67%+***	44%	15%	5%
2. School Surveys	86%	67%+	61%	46%	43%
3. Test Construction	71%	nd**	44%, 50%	nd	10%
4. Consultative Assistance . . . Public School Administration	nd**	nd	72%	54%	61%
5. Educational Information Service	64%	67%+	28%	nd	nd
6. Job Placement of Students	nd	nd	nd	15%	12%
7. Conferences, Workshops	nd	nd	nd	23%	48%
8. Edit Publications of College of Education	nd	nd	39%	nd	nd
9. Help Schools Implement New Programs	nd	nd	nd	nd	49%
10. Construct Exams for Faculty	nd	nd	nd	nd	13%
11. Publicity Service	28%	nd	nd	nd	nd
12. Educational Guidance	36%	nd	nd	nd	nd
13. Training Teachers for Special Testing	43%	nd	nd	nd	nd
14. Teaching Service	43%	nd	nd	nd	nd
15. Classification	57%	nd	nd	nd	nd
16. Checking Building Plans	50%	nd	nd	nd	nd

*Sources are indicated on page C-8.

**No data, i.e., activity not listed by investigator

***Rosengarten reported only those funcations which were represented by 67% or more of the Bureau, and did not provide the exact percentage.

Historical Comparison of Activities of University Affiliated Bureaus of Educational Research

Research Activities	Chapman (1927)	Rosengarten (1936)	Eckert (1949)	Miller (1958)	Lazarsfeld-Sieber (1965)
	N=15	N=15	N=18	N=18	N=61
1. Research other than School Surveys	57%h	67%+**	50%, 56%	85%	(100%)
2. Evaluational Studies	64%	nd	nd	nd	66%
3. Advise Faculty Outside Education on Research	nd*	nd	61%	nd	48%
4. Facilitate or advise on Ed. Faculty Res.	nd	nd	67%, 50%	15%	23%, 31%
5. Research Requested by Faculty Committee	nd	nd	33%	nd	14%
6. Research for University Administration	nd	67%+	67%, 50%	15%	23%, 31%
7. Conduct Research Requested by State Dept. of Educ.	nd	nd	44%	nd	22%
Training Activities					
Guiding Research Studies of Students (not to be confused with formal training program)	93%	67%+	61%, 51%	70%	78%
Other Activities					
1. Publication	nd	nd	nd	77%	44%
2. Library	nd	nd	nd	15%	46%
3. Student Personnel Problems	50%	nd	nd	nd	nd
4. Financing Other than Budgeting	43%	nd	nd	nd	nd

*No data, i.e., activity not listed by investigator.

**Rosengarten reported only those functions which were represented by 67% or more of the Bureau, and did not provide the exact percentage.

Past Surveys of Research Units

in Schools of Education

Chapman, Harold B., "Organized Research in Education," Bureau of Educational Research Monographs, No. 7, Ohio State University Studies. (Columbus: Ohio State University Press, 1927)

Rosengarten, William, "Organization and Administration of Educational Research in Departments, Schools and Colleges of Education in Universities," Rho Monographs in Education, No. 1, September, 1936.

Eckert, Ruth E., "Report on the Organization and Services of Bureaus of Educational Research in Leading American Universities," (mimeo), Office of Educational Research, University of Minnesota, May, 1949.

Miller, Harry K., Jr., A Study of the Field Service and Research Units of Ten Schools of Education. Ph.D. dissertation, Stanford University, June 1958.

APPENDIX D

THE SURVEY OF AUTHORS

Technical Notes on the Survey of Authors of Empirical Research Articles Related to Education Published in 1964

A total of 1014 empirical research articles were found in 38 journals. (The journals which were studied are listed below.)

Articles which were devoted exclusively to subjective reports of personal experiences, such as a teacher's report on her instructional methods, were not regarded as empirical research. Also excluded were social bookkeeping studies, such as salary surveys, enrollment projections, and descriptive studies of physical facilities, unless the survey was done in connection with analytical research. Conceptualizations based on empirical research, abstracts of findings, review articles, and methodological models were likewise excluded.

Of the 1014 articles included in the study, 174 were excluded because of foreign addresses, or because another article by the author was already included. (We decided to represent each author by only a single article. Thirteen per cent of the original 1014 articles were excluded for this reason.)

Letters, instructions, and a self-addressed postcard were sent to the authors (see below). When addresses were not given in the journal, the names were looked up in various professional directories.

Journals Used for Selecting Education Research Articles

Research -General -Education

- American Educational Research Journal
- Calif. Journal of Educ. Research
- Educational & Psychological Measurement
- Journal of Educ. Res.
- Journal of Exp. Educ.

General -Non-Education

- Journal of Educ. Psych.
- Sociology of Educ.

Specialized -Education

- Journal of Develop. Readings
- Journal of Research in Music Educ.
- Personnel & Guidance Journal
- Journal of Counseling Psych.

Specialized -Non-Education

- American Journal of Mental Deficiency
- Child Development
- Journal of Personality
- Journal of Speech & Hearing Disorders
- Speech Monographs

Non-Research -General -Education

- Harvard Educ. Review
- Journal of Educ. - Boston U.
- Peabody Journal of Educ.
- School Review

General -Non-education

- Improving College & Univ. Training

Specialized -Education

- Adult Education
- Arithmetic Teacher
- Audio-Visual Comm. Review
- Elementary School Journal
- Exceptional Children
- Journal of Bus. Educ.
- Journal of Res. in Science Teaching
- Journal of Teachers Educ.
- Nat'l.Assoc. of Secondary School Principals Bulletin
- Nat'l. Bus. Educ. Quarterly
- The Reading Teacher
- School & Society
- Science Educ.
- Studies in Art Educ.
- Vocational Guidance Quarterly

Specialized -Non-education

- Journal of Comm.
- Training School Bulletin

LETTER SENT TO AUTHORS OF RESEARCH ARTICLES

The enclosed postcard is being sent to you in connection with a national study of research related to education. This investigation is being carried out by the Bureau of Applied Social Research, Columbia University, with support from the U. S. Office of Education.

An important part of this study is a content analysis of a sample of research articles published in the year 1964. Preliminary to this analysis, we are conducting a survey of the authors of these articles to identify the contexts within which the research was carried out. Therefore, all questions refer to the time when you did your study. The article to which we refer is the following:

To clarify certain terms used in the postcard, we have enclosed a page of explanation. We would appreciate your answering these questions and returning the postcard to us as soon as possible.

Thank you.

Yours sincerely,

Sam D. Sieber
Project Director

Al Goldberg
Research Supervisor

Enc.

INSTRUCTIONS FOR FILLING OUT POSTCARD

I. Major author

If you were the sole author check "yes."

If you were co-author, but it is not possible to designate the "major" author, reply in terms of the one who had major influence upon the design and analysis of the study.

If it is not possible to say who had major influence upon the study, check "equal authorship."

II. Institutional affiliations (at the time of the study)

Check all of your affiliations during the time you were working on the study.

If you had any association with a school or department of education (e.g., studying, teaching, research, or service at a university) check either graduate or undergraduate, or both.

If you worked outside of a university or a college, give the name of the agency where you worked (e.g., Oakland, Calif., Public Schools; National Merit Scholarship Corp.; Pacific State Hospital).

III. Position (at the time of the study)

This question refers to the position you held at each institution listed in Part II at any time during your study. Write in the appropriate space the letter next to the category you checked off when listing your institutional affiliations. For example, if you were a faculty member in the graduate school of education, you should place an "a" in the space next to the category "mainly teaching." If you also did research at an agency outside the university, place a "d" in the category "mainly research."

IV. Association with a research unit (at the time of the study)

This question refers to any association with a research unit, either inside or outside a university (bureau, center, lab school, office, testing agency, etc.). This association could have been either as a staff member, as a student trainee, or through the use of facilities provided by the unit.

V. Your field or specialty (at the time of the study)

Some examples of specialties are: child development, psychology of learning, school administration, reading, guidance, etc.

VI. Dissertation

Check yes if the article reported any results of your dissertation or originally appeared in your dissertation.

VII. Your name

We are requesting you to print your name so that the returned postcard can be matched with your article.

POSTCARD QUESTIONNAIRE

FOR AUTHORS

CHECK ALL THAT APPLIED AT THE TIME YOU DID YOUR RESEARCH

I. Were you the major author?
☐ Yes ☐ No ☐ Equal authorship

If no: Who was? ______________________________

II. All institutional affiliations
(check all that applied at the time)

University or college:

(name) ______________________________

Education school or department
Graduate a ☐
Undergraduate b ☐
Liberal Arts and Sciences

(Dept) ______________________________ c ☐

Outside of University

(Agency) ______________________________ d ☐

III. Position (write letter from Section II)
Mainly teaching ____
Mainly research ____
Student ____
Other (indicate below) ____
____

IV. Association with a research unit

(name) ______________________________

Staff member ☐
Facilitated ☐
Trainee (student) ☐

V. Your field or specialty
(when the research was conducted)

VI. Dissertation
Was the article part of your dissertation?

Yes ☐ No ☐

VII. Your name

____
(please print)

TABLE 1

Institutional Affiliations of Authors

Affiliations	
University affiliations:	
Education departments	
Graduate	43%
Undergraduate	16
Liberal Arts and Sciences	
Psychology	27
Sociology	3
Speech	6
Medicine	3
Other	10
School system	11
Independent research units and agencies	15
	134%*
	(811)

TABLE 2

Positions of Authors in University Departments of Education and of Liberal Arts and Sciences

Positions	Graduate Education	Liberal Arts & Sciences
Teaching	50%	48%
Research	19	32
Student	34	24
Administration	9	6
Other	3	5
	115%*	115%*
	(350)	(396)

*Total per cent exceeds 100% due to multiple responses.

TABLE 3

Association of Authors with Research Units at or Outside of a University, According to Institutional Affiliation of Author

Type of Unit	Affiliation Graduate Education	 Liberal Arts	 Other Education*	 Indep. Agency	Total
Staff member or student in a university research unit	17%	21%	6%	2%	17%
Facilitated by a research unit	4	10	7	64	11
No association with a unit	80	69	87	34	72
	101%	100%	100%	100%	100%
	(350)	(338)	(70)	(53)	(811)

TABLE 4

Field of Specialization of Authors, According to Institutional Affiliation

Specialization	Affiliation Graduate Education	 Liberal Arts	 Other Education*	 Indep. Agency	Total
Education	56%	4%	46%	13%	31%
Psychology	21	61	31	45	40
Educational psychology	10	1	11	8	6
Testing	8	4	4	9	6
Speech	1	14	3	6	7
Social sciences	2	8	0	2	4
Medicine	0	3	1	8	2
Other	3	5	3	9	4
	101%	100%	99%	100%	100%
	(350)	(338)	(70)	(53)	(811)

* School systems and undergraduate education.

TABLE 5

Per Cent of Articles Which Were Part of Author's Dissertation or Other Student Work, According to Institutional Affiliation

	Affiliation				
Type of Paper	**Graduate Education**	**Liberal Arts**	**Other Education***	**Indep. Agency**	**Total**
Doctoral dissertation	35%	14%	9%	4%	22%
M.A. or other school paper indicated	1	4	1	0	2
Student work not indicated	64	82	90	96	76
	100%	100%	100%	100%	100%
	(350)	(338)	(70)	(53)	(811)

TABLE 6

Sex of Author, According to Institutional Affiliation

	Affiliation				
Sex	**Graduate Education**	**Liberal Arts**	**Other Education** *	**Indep. Agency**	**Total**
Male	84%	82%	83%	74%	82%
Female	13	13	16	23	14
Not ascertainable	4	5	1	4	4
	101%	100%	100%	101%	100%
	(350)	(338)	(70)	(53)	(811)

* School systems and undergraduate education.

TABLE 7

Number of Co-authors, According to Respondent's Institutional Affiliation

Number of Co-authors	Affiliation Graduate Education	Liberal Arts	Other Education	Indep. Agency	Total
None	65%	49%	67%	47%	57%
One	29	37	21	30	32
Two	5	11	7	21	9
Three	1	2	4	2	2
Four	*	1	0	0	*
Five	*	*	0	0	*
	100%	100%	99%	100%	100%
	(350)	(338)	(70)	(53)	(811)

*Less than 1%

TABLE 8

Region in Which Author's University is Located According to Institutional Affiliation of Author

Region	Affiliation Graduate Education	Liberal Arts	Other Education	Total
Northeast	25%	30%	33%	28%
North Central	37	36	19	36
West	26	19	28	23
South	12	15	19	14
	100%	100%	100%	100%
	(350)	(338)	(36)*	(724)**

*Excluding 34 who had no affiliation with a university.

**Excluding 87 who had no affiliation with a university.

TABLE 9

Research Quality of Author's University, as Rated by Deans and Coordinators, According to Institutional Affiliation of Author

Rating	Graduate Education	Liberal Arts	Other Education	Total
Best	32%	28%	14%	29%
Next best	14	11	11	12
Other universities	41	50	33	45
Schools with no doctoral program	13	11	42	14
	100%	100%	100%	100%
	(350)	(338)	(36)*	(724)**

*Excluding 34 who had no affiliation with a university.

**Excluding 87 who had no affiliation with a university.

TABLE 10

Type of Education Journal in Which Article Appeared, According to Institutional Affiliation of Author

Type of Journal*	Graduate Education	Liberal Arts	Other Education	Indep. Agency	Total
Research					
General education	32%	14%	27%	19%	23%
General non-education	4	10	1	8	7
Specialized education	18	12	17	9	15
Specialized non-education	8	53	23	45	30
Non-research					
General education	5	1	1	0	3
General non-education	1	1	0	0	1
Specialized education	31	6	29	13	19
Specialized non-education	1	3	1	6	2
	100%	100%	100%	100%	100%
	(350)	(338)	(70)	(53)	(811)

*Note: Research - more than 50% of articles in journal were research.

General - journal articles were not restricted to one specialty within the field of education.

Education - more than 50% of articles in journal were written by educators.

TABLE 11

Substantive Focus of Bureau and Non-Bureau Authors (Graduate Education Only)

	Bureau	Non-Bureau *
1. **Curriculum and Teaching**		
1. Methods of instruction	8%	16%
2. Programmed instruction	2	3
3. Teaching machines	2	0
4. Content or quality	3	2
Total curriculum	15	21
2. **Special Education**		
1. Education of the deaf and blind	0	1
2. Mentally retarded	3	2
3. Talented, gifted, high-ability students	2	1
4. Adult education	0	1
Total special education	5	5
3. **Administration**		
1. School finance	0	0
2. Administration and organization	12	4
Total administration	12	4
4. **Training of teachers**		
1. Education as a profession; training	3	7
2. Qualities of teachers -- background, etc.	0	6
Total training of teachers	3	13
5. **Guidance, Counseling**	5	10
6. **Research Methods**		
1. Tests and measurements	22	7
2. Other research methodology	2	1
3. Evaluation of educational research	0	1
4. Dissemination of research results	0	1
Total research methods	24	10
7. **Psychological Processes**		
1. Learning and level of knowledge	17	13
2. Child development not related to learning	8	10
Total psychological processes	25	23
8. **Social Context of Education**		
1. Sub-cultural differences	3	6
2. Other social problems	0	2
3. School-community relations	0	1
4. Comparative education	2	0
5. Career patterns and occupational choice	5	3
Total social context of education	10	12
9. **Speech and Normal Skills**		
1. Speech, audiology	0	0
2. Normal skills (hearing, sight)	2	1
3. Physiological data	0	1
Total speech and normal skills	2	2
	101% (60)	100% (100)

* Thirty-four per cent sample of non-bureau authors.

TABLE 12

Group Studied by Bureau and Non-Bureau Authors (Graduate Education Only)

Group or Stratum Studied	Bureau	Non-Bureau *
Public, community, parents	0%	3%
Government of school; school board	5	1
Administrators	8	8
Faculty	10	21
Students	72	72
Guidance counselors	3	3
Pre-school children	3	1
Higher education	7	0
Alumni or former students	3	4
Does not apply	3	7
	114%**	120%**
	(60)	(100)

*Thirty-four per cent sample.

**Total percent exceeds 100% because some studies were concerned with more than one group.

TABLE 13

Grade Level Studied by Bureau and Non-Bureau Authors (Graduate Education Only)

Grade Level Studied	Bureau	Non-Bureau*
Elementary (grades 1 through 8)	42%	41%
Secondary (grades 9 through 12)	25	19
Entire school system	3	2
Higher education	30	33
Other	8	8
Pre-school	7	3
Grade level not clear	2	3
	117% **	109%**
	(60)	(100)

* Thirty-four per cent sample.

**Total percents exceed 100% because some studies were concerned with more than one level.

TABLE 14

Size of Sample in Studies by Bureau and Non-Bureau Authors
(Graduate Education Only)

Size of Sample	Bureau	Non-Bureau*
1. 0 - 39	10%	14%
2. 40 - 99	25	29
3. 100 - 199	22	19
4. 200 - 299	8	12
5. 300 - 499	12	8
6. 500 - 999	5	6
7. 1000 - 1499	3	6
8. 1500 - 2999	2	0
9. 3000 - 4999	3	2
10. 5000 and over	2	0
X. Sample units not countable	7	2
Y. Size of sample not specified	2	2
	101%	100%
	(60)	(100)

TABLE 15

Design of Studies by Bureau and Non-Bureau Authors
(Graduate Education Only)

Design of Study	Bureau	Non-Bureau*
1. Descriptive survey	20%	29%
2. Descriptive and analytical survey	20	4
3. True experiment (following Campbell and Stanley)	10	10
4. Quasi-experimental design	48	57
8. Other design	2	0
	100%	100%
	(60)	(100)

* Thirty-four per cent sample of non-bureau authors.

APPENDIX E

THE USE OF FIELD REPRESENTATIVES IN A QUESTIONNAIRE SURVEY OF UNIVERSITY PERSONNEL

A few remarks about the history of our project are needed in order to understand the importance which field representatives have assumed. We originally intended to send a short questionnaire to deans of schools of education for the purpose of learning about attitudes towards research. Directors of bureaus of educational research, who were to occupy the center stage in our study, were to receive a much longer questionnaire. When we submitted our plans to the members of the Advisory Committee, however, we were strongly urged to gather more background information about the schools before sending out questionnaires to bureau directors. Since, as it was pointed out, schools of education often perform research independently of bureaus, we were advised to look into the arrangements that had been set up to do this -- in effect, to treat schools of education in much the same fashion as we planned to study bureaus.

We therefore expanded the questionnaire intended for deans, and designed an additional questionnaire for individuals who carry some responsibility for coordinating the research of individual faculty members (coordinators). This latter position, incidentally, was also brought to our attention by the Advisory Committee. Thus, one of the major outcomes of our conference with the Committee was a shift of attention from bureaus to their contexts, at least for the time being.

We now faced the problem of obtaining responses to questionnaires designed to gather a great deal of information about organizations which are considerably more complex than most research units. Because we needed to collect statistical data that would require some time for the respondent to compile, we felt that interviews would be inappropriate; and clearly, we could not personally visit some 110 schools of education. On the other hand, the length and detail of the two questionnaires made it inadvisable to expect returns by mail. Hence, some kind of personal contact seemed necessary. Moreover, we anticipated that questions about research arrangements might not seem very pertinent to deans, and that we might therefore fail to enlist their interest in the study. This consideration added to our conviction that personal representatives were needed. Although we had originally planned to commission a junior faculty member in sociology in each university for the purpose of contacting the bureau directors, this strategy now assumed much greater significance as our attention shifted from bureau directors to university administrators. Our plan was to have the field personnel locate the appropriate respondent, explain the study to him, answer any questions that he might ask about the completion of the questionnaire, obtain the completed form on a return visit, and forward it to our office after checking for complete answers. In short, we adopted a method of data collection which lies between interviewing and mailed questionnaires.

As far as we know, no account exists of the issues that are raised by this type of data collection and of the manner in which they are handled. And since there is increasing interest among social scientists in the study of large numbers of organizations, and especially in the study of schools, we believe it would be worthwhile to report our experiences with field representatives in some detail.

Our experiences may be broken down into several phases. First, we had to obtain recommendations of junior faculty members for the assignment. Second, we had to contact the recommended people in order to explain the job and invite their participation. Third, we had to send them the questionnaires and instructions. Fourth, we had to carry on correspondence to iron out any difficulties. And fifth, we used the comments of the field representatives to gain additional information about the respondents and their setting. Each of these phases will be described below.

1. Obtaining recommendations.

Our first method of getting recommendations was to supply a list of the institutions in our study, along with a request for names of individuals who were able to carry out the assignment, to our colleagues in the Department of Sociology and in the Bureau. The names that we collected from these lists were written on index cards set up for each institution.

There were several reasons why this initial approach did not work out. Although we asked for the names of junior faculty members in sociology, many of those named were at higher levels. This mainly reflected the sociometric circle of those from whom we requested names. Further, several of the persons we consulted tended to name someone who was better qualified to make recommendations. This person often turned out to be the chairman of the department where we were looking for a field representative. Finally, those we asked for recommendations did not know of anyone in many of the universities; indeed, they were unaware of the existence of some universities. In short, the approach was not very fruitful, and only 9 persons who became field representatives were recommended in this fashion.

We therefore tried another approach which was suggested by the frequency with which we were referred to a department chairman for a recommendation. We obtained the names of the chairmen of departments of sociology from school catalogues in one of the Columbia libraries, and then wrote to them explaining the project, the type of person we wanted, and the tasks that we expected him to perform (see page E-19). All of the chairmen eventually responded or referred the letter to a candidate who wrote to us directly. Fourteen chairmen required follow-up letters after a period of about six weeks. Four were unable to recommend anyone, explaining that the staff was too busy. Two of the chairmen recommended themselves. In about four schools we were advised to use an advanced graduate student and did so.

It can be seen in the letter that our correspondence with the chairmen included the form letter that we planned to send to recommend people. This enclosure explained the job in a general way and mentioned the honorarium of $30 per contact with respondents. We hoped that the letter would make it easier for the chairmen to assess the job. In several cases it was clear that he had shown the letter to a faculty member before recommending him, although we neglected to advise this procedure. No doubt if we had simply asked the chairmen to sound out the candidates beforehand, we could have avoided refusals later on. On the other hand, the chairmen may have procrastinated longer than they did.

2. Contacting prospective field representatives

The form letter mentioned above, together with a one page description of the entire project, was sent to each recommended person. The self-addressed post card which was enclosed requested another recommendation if the individual was unable to take on the assignment himself. (See pages E-21-23 for the materials sent to recommended persons.) After only 10 follow-ups, all but one of them replied. Thirteen persons turned down the job, explaining that they did not have the time. Most of these recommended someone else who eventually accepted. It took about five weeks after our initial letter to the chairmen to sign up almost all of the field representatives.

Several persons asked for more information about the assignment. Their main concerns were two: the amount of travelling, and the kinds of tasks that were expected in addition to handling the questionnaire. Since our letter did not explicitly state that the job was confined to the representative's campus, several wanted to know how much travelling was involved and what expenses were provided. It was clear that if travelling had been requested, some of our prospects would have declined the job.

The second ambiguity in our letter concerned the "other tasks" that were expected later on after we had looked over the questionnaires. As the original letter stated:

> There may be other tasks which we will ask the field representatives to handle, such as the collection of research reports and other materials from the bureaus, and inquiries about informal arrangements for research. The extent of such tasks will depend upon the scope of the research program found in the school of education.

This paragraph raised some doubts in the minds of several people.

The following reaction was typical:

> ...I would consider taking the role of campus representative if you would provide me with some more detailed information. For example, how much follow-up time will be involved, etc. Does extra pay accompany the possible extra tasks which you mentioned? And does extra pay accompany follow-up attempts?
>
> The reason I ask these questions is that I played a similar role at Yale last year for NORC, and I found that these are important questions.

So it became necessary to reply to such inquiries in the following manner:

> The extra tasks which might arise from our perusal of the questionnaires should not require more than two or three hours, and would be restricted to an informal talk with a professor or two about the research program, and perhaps obtaining printed materials about the research which is underway. We shall provide an additional fee only if formal interviewing or a case study is involved; but you should feel free to decline these latter tasks if you do not have the time.

This reply seems to have satisfied those who raised the question. We see now that it would have been advisable to have included this more specific explanation in the original letter.

In addition to this type of query, there were several who wanted to know the number of persons to be contacted on their campus, although we made it clear that there were only a few. For these individuals we supplied the number of bureau directors and university administrators whom we wished to reach. Since the number of respondents varied from school to school, it had been impossible to compose a form letter which specified this number. If we had taken the time to go through our records for each university (which was based on a brief letter to deans several months earlier), we could have typed in the information on the form letters. But the small number of queries which we received on this point confirmed our feeling that considerable time could be saved by avoiding this extra clerical task.

Incidentally, since none of our prospective field representatives declined the job on the grounds that the honorarium was insufficient, it seems that $30 per respondent was a reasonable amount to offer. It is quite possible, though, that some of those who pleaded lack of time really felt that the compensation was not equal to the job.

3. Sending questionnaires and instructions

The next phase was pretty routine since it did not depend upon a reply from our representatives. The detailed instructions are shown on pages E-25-26. In addition to giving the names of the respondents, the instructions suggested how they might be dealt with. Finally, we made the following request:

> It would be helpful if you could write a brief account of your visit with the respondent. Was he hostile to the survey, did he seem informed about the types of information we ask for, did he seem eager to articulate his opinions to you? Were there any important points that he made to you about any aspect of the survey that might help us understand his institution or his responses to the questionnaire?

The comments of the field representatives will be presented later on.

In some schools we were unable to identify the respondents by name, so we simply described the position that we were interested in studying and asked the representative to contact the person in that position. No problems arose in the few cases where this procedure was followed, which suggests that it was unnecessary to give names at all. But no doubt the names made it more convenient for the representatives, as well as insuring that the right persons were contacted.

4. Corresponding with field representatives on the status of their work

In the course of the field work, correspondence was initiated by most of the representatives. About half of their letters required an answer; the remainder were simply acknowledgments of receiving the materials or notifications of a delay in retrieving the questionnaire.

Before looking at some of the problems that arose, it is worth recognizing that letters which reassured us that progress was being made were helpful in allaying the usual anxieties over returns. On the other hand, this kind of reassurance can divert the project director from sending a needed follow-up letter to urge participation in the survey. The following case is a good illustration. About three weeks after sending out the questionnaires, the following letter was received from a representative:

> Dean ----'s general reactions were quite positive with the provision that he be permitted to complete the questionnaire not later than July 1 (i.e., about five weeks later). If a more rigid time requirement is imposed then he would be unwilling to complete the questionnaire. In essence his position was that the various commitments which occur at the end of the academic year would negate his doing a good job on this rather lengthy questionnaire. I informed him that I felt that you would probably be willing to grant his request rather than eliminate the University of ---- from the sample, but that I would write for further instructions. I have retained all of the materials including the questionnaire.

I wrote the representative that this was perfectly acceptable. Hindsight informs me that I should have told him to leave the questionnaire on the dean's desk, and also should have written a personal letter to the dean stating that we were willing to wait because of the importance of his questionnaire, and so forth. As it turned out, the dean notified the field representative seven weeks later (after the representative had returned with the questionnaire) that he definitely would not participate. The letter which the representative wrote on this occasion was far more revealing of the dean's original attitude than the first letter had been when his reaction was described as "quite positive."

> ...he has now indicated that he does not wish to participate in your project because of misgivings about the questionnaire. Dean ---- expressed similar doubts during our initial conversation and the two brief contacts since then. At no time was he particularly enthusiastic about the task of completing the questionnaire because of its length and detail.
>
> Since I have already spent more time on this matter than I can "afford", I am returning the questionnaire to you for whatever disposition or follow through you wish to make. If additional contacts with Dean ---- are anticipated, I suggest that your office make the contacts directly with him.

If we had received this type of communication earlier, we might have been able to convince the dean to participate through a special letter. The case illustrates how a field representative can lull the project director into a sense of euphoria when emergency tactics are actually called for.

The problems that obviously needed our action were mainly of two kinds: (a) locating respondents, and (b) urging respondents to participate in the survey.

(a) In several cases someone else had entered the respondent's position since we had compiled the names. Since our instructions had been very firm about contacting only those persons whom we designated, the representatives wrote us for clearance before making a new contact. In most of these cases we simply confirmed their own judgment about a replacement. For example:

> I have been able to get in touch with Dr. W. A. and he informs me that he is no longer Dean of the School of Education. The new Dean is Dr. M. V.
>
> If you would like Dr. M. V. to fill out the questionnaire, please let me know immediately.

In some other cases no replacement seemed to be available. The following letter is an example:

> I received your materials for the survey of educational research. Since we first corresponded, and doubtless since you pursued the names of the sample, the dean of the College of Education, Hollis A. Moore, has resigned. To my knowledge no successor has been named.
>
> Before contacting Dean Moore, I shall wait for instructions regarding his inclusion or exclusion as a respondent

Because Dean Moore had been a prominent figure nationally, I advised the representative to contact him anyway.

A sticky problem developed in two schools where the position of research coordinator had been vacated. Since we had designed a shorter (green) questionnaire for deans in schools with research coordinators, we stood in danger of losing a great deal of information unless the two deans were given the longer (yellow) questionnaire which included many of the items intended for the coordinators (blue). Hence, when we discovered that no coordinator existed, we quickly sent the representatives the longer version as a replacement for the one which the deans had already received. This is what happened in one of the schools:

> The colored questionnaire caper is closed. After receiving your last letter and the yellow form, I made a mad dash to ----'s office, shouting, "Have you finished the blue form?" He apparently felt guilty as hell over not having filled it out, that when I said "Great, please fill out this yellow one," he appeared relieved.

The completed questionnaire was returned to our office only a week later.

These problems were settled by following the representatives' judgment, but there were a few cases where we had to correct the judgment of the representative. For example, the following letter was received:

> As you may know, the U. S. Office of Education has selected University of Pittsburgh as one of two sites for national centers for educational research. The orientation of the "Learning Research and Development Center," headed by J. Steel Gow, Jr., is toward research in instructional technology. You may want to consider giving Steel Gow a blue questionnaire.

Since Gow was already known to us as the director of a research center, we planned to include him in a later survey of bureau directors with a quite different questionnaire. I told the representative, therefore, that I would send another questionnaire for Gow's files, but definitely not for his completion.

(b) The second set of problems that required our attention was the perennial one of overcoming the reluctance of respondents. Several of the field representatives were most helpful in informing us of the reasons that respondents hesitated to fill out the questionnaire, and a few even suggested the approach that promised to be most effective in a personal letter. As one representative wrote:

> He needs a letter from you, I think, pointing out why the information from him is necessary, why some other big ten school cannot be chosen instead, and so on. ... he essentially refused at one point, and retained the questionnaire only very reluctantly.

After composing a letter along the lines suggested by the representative, the respondent finally completed the questionnaire. Another representative wrote:

> I have been told by others that I am getting standard treatment and that I am wasting my time to expect a return of the questionnaire. I believe there may still be hope, however, if you will write a note to the dean and point out the value of his completing the questionnaire and maybe suggesting that time is important as of now.

This respondent also completed the questionnaire after a follow-up letter which complied with the representative's advice. In part our letter read as follows:

> Since we are becoming rather pressed for time, we would greatly appreciate it if you could give your attention to the form in the next week or so.
>
> We believe that the study will be of considerable value to the profession inasmuch as it will provide objective information for the first time about the array of research arrangements in the nation and the problems experienced by schools of education in performing research.

Still another representative after sizing up the respondent advised us to write a letter "and use some flattery."

If our field personnel reported that the respondent was critical of the questionnaire, we replied by mentioning the names of deans and others who had helped in its formulation. This device also seemed to work. Regarding the inordinate length of the questionnaire, we had this to say:

> We realize that the questionnaire is unusually long and detailed, but after consulting with a number of university administrators we concluded that an elaborate form was necessary to answer the many questions that are salient to professional educators.

The most frequent criticism that was reported to us was that the amount of time required to collect the statistics which we had requested made the task impossible. To those who raised this question we responded:

> The institutional statistics which are called for in several questions need not be perfectly accurate since we are chiefly interested in classifying schools into broad categories for analysis. Reasonable estimates are therefore quite appropriate.

But our follow-up letters were not always effective, and in one case we received a memorable back-lash. As the dean replied:

> Your letter of June 20 further convinces me that I should not fill out the enclosed booklet. I am, therefore, returning the booklet to you. If I thought the research would serve the profession, I should try to comply. I am not so convinced.

But there is some salving of the ego to be derived from blaming the field representative for the dean's reaction, for the representative had informed us as follows: "It was his feeling that the categories as listed in the form did not enable him to give an accurate picture of the institution." We replied to this issue, therefore, and neglected to play up the value of the study to education, which now seems to have been the respondent's main concern.

Despite the possibility of being misled by the representative, it was extremely helpful to hear about the respondent's particular misgivings before sending a follow-up. This opportunity constitutes a distinct advantage over the usual type of mail questionnaire survey in which non-respondents usually do not bother to state their reservations.

In a few cases the representative seemed superfluous. One dean "expressed surprise at the need for a field representative and saw no reason for my picking up the questionnaire." But this reaction may have covered up a preference for sending the questionnaire directly to us without giving the representative an opportunity to peruse its contents. Since the respondent was on the staff of the university in which the respondent held an important position, we tried to anticipate this problem in our instructions:

> If the respondent wishes to seal the questionnaire in some way so that you yourself will not read it, that is permissible; although it would be better if you could look over the questionnaire after it is filled out so that unanswered questions could be followed up. This obviously is a matter that must be handled with tact, and is therefore left to your discretion.

We do not know how many of the representatives raised the question, but several of the respondents informed them that they would return the questionnaire directly to our office. Yet there was another drawback of this procedure besides not giving an opportunity for follow-up. Sometimes the questionnaire did not arrive after several weeks, although every assurance had been given the representative that it would be sent to us. It was necessary, therefore, to keep a special file of these cases so that the representative could be informed. And so it frequently turned out that the representative was not superfluous after all.

It has already been mentioned that most of the field representatives wrote letters describing the status of their work. We waited several months before sending follow-up letters to the remaining representatives because the questionnaires had been sent out in the last months of the school year when the administration was unusually busy, and left with them during the summer when both respondents and representatives took vacations. By the middle of the summer we felt it was time to receive some word, and so we wrote to the 25 field representatives who had failed to correspond with us saying that we were becoming pressed for time, and that we would be willing to write a letter to the respondent if necessary. (The proportion of representatives requiring this follow-up letter was 27 per cent.) The replies which we received indicated that the delay was usually due to unavoidable circumstances, rather than to the respondents' unwillingness to participate. For example:

> Sorry about not letting you know about the delay on----. Giving him time to assume his new post as dean, vacations, and forgetful putting it aside led to the slowdown. He promises to have it ready to give back within three weeks, and I will be calling him in two weeks. I'll let you know if there is any problem requiring a contact from you, but I am almost certain there isn't.

One of our field representatives from whom we had not heard for several months responded by returning the questionnaire along with a detailed account of his tribulations. Because his experiences pretty well cover the lot, we quote his letter in full:

> Please forgive the long delay in returning the questionnaire. Several circumstances were responsible.
>
> In the first place, the name which you sent to me was that of the retired dean of the School of Education here at ----. I first contacted him, but he was unwilling to participate since he felt he would be usurping the duties of the new dean. I then got in touch with Dean H. W. Schooling (appropriate name isn't it?) and he eagerly consented to participate. He told me, however, that since it was mid-May he could not complete it until school was out. I explained the necessary details to him and left.
>
> Several times during the summer I returned to his office, but was never able to catch him. I asked his secretary about the questionnaire, but she had no knowledge of it. It was almost August before I was able to see him again. He reassured me of his interest and his intention to cooperate. He showed me the partially completed form on his desk and said he would call me when he had finished.

> He said that the demands of his job plus illness and death in the family had made it impossible to do it as quickly as he would have liked.
>
> This morning (August 20) I received the questionnaire by mail. I have checked it over and find it complete. . . .

Not all of the replies to our follow-ups to representatives were so reassuring. After three months of silence, one representative responded in full as follows:

> I am sorry, but the giving of this interview is a more formidable task than I can undertake at present.

Incidentally, if it appeared from the representative's letters that a great deal of extra effort had gone into the assignment, we increased the honorarium proportionately. For example, one person mentioned that he had compiled statistics from each department head in order to complete the questionnaire, since this information was not centrally available. Another spent a good deal of time talking to three respondents who supplied information where he was supposed to be compensated for only one respondent.

We decided to pay the representatives after they had completed their mission, rather than wait until the directors' questionnaires were also distributed and returned. If payment is made after each major phase of a survey, they are probably more likely to feel motivated for the next phase, especially if the survey takes a year or more.

A final problem was the loss of two completed questionnaires. We received the following note from an harassed representative:

> Dean ---- filled out the questionnaire and returned it (or tried) through "campus mail" -- some moron lost it en route. All efforts to find it have been fruitless. He said if you would send another he would be glad to fill it out a second time. (This time I will call for it as I offered to do last time.)

Fortunately, the dean completed a second questionnaire shortly thereafter. The dean in the other school whose questionnaire was lost someplace in his administrative offices also filled out another.

5. Learning about the respondent and his school

As mentioned earlier, we asked our field personnel to describe the respondent's reaction to the survey and any other observations that might be helpful in interpreting the questionnaire or in understanding the school of education. Not all of our representatives complied with this request, and many of those who did failed to give much information. Most often they confined their remarks to the respondent's attitudes. The following are examples of favorable responses:

> He was glad to fill out the questionnaire and gave his full cooperation.
>
> Professor --- seemed most willing to cooperate in completing the questionnaire. After asking a few preliminary questions, he appeared confident of his ability to answer the questions. He remarked favorably on the comprehensiveness of the questionnaire.
>
> Dr. --- was very cooperative in this activity and answered all of the questions as carefully and thoughtfully as one could expect. He was critical of the instrument in some respects, but he indicated that the kind of investigation it represented was needed.
>
> Dr. --- was very interested in the study and most cooperative in filling out the questionnaire. He spoke freely of the need for such research and his willingness to be a part of it.
>
> Dr. --- was very cooperative throughout our association, and he was very interested in the goals and objectives of the research program.

A smaller number of respondents were rather critical, and a few were hostile, according to the representatives. The most frequent criticism had to do with the length and detail of the questionnaire. As one representative reported:

> The Dean's attitude toward the questionnaire is resistive, if not outright hostile. He complained of the number of questionnaires that he and his staff must complete and the "self studies" and accrediting agency studies they are required to submit. He did promise, however, to complete the questionnaire as quickly as possible. ...The dean strongly objected to the assembling of supporting materials, claiming that there would be an extraordinary amount of work involved.

Sometimes this type of response took its toll or our representative's morale, as in the following case:

> It appears that I am not going to get any cooperation from (the dean). I have called him several times and get the usual answer, I'm terribly busy, etc., etc. I'm sick and tired being nice to him. As a matter of fact I'm sick and tired of the whole School of Education. If you are going to do further work at the University of ---, may I suggest Professor --- . He is in his 40's and his boiling point is below mine.

There is little question but that the questionnaire demanded a great deal of time to complete, and our experience now tells us that many of the numerical questions should have been eliminated. Frankly, we expected that much of the information was readily available, and in our pre-tests we pointedly inquired whether the statistical questions were answerable without much difficulty. It seems likely that our pre-test schools kept more complete records than the majority of schools in our survey. At any rate, our experience with this type of questionnaire has been chastening, and suggests that we have not yet solved the problems of designing an institutional questionnaire that is comprehensive without being prohibitively complicated. In one case a field representative sided sympathetically with the dean and advised us of his position in admirably direct language:

> My availability for contacting others in the fall will depend primarily upon the amount of time required for them to fill out the questionnaire. I am not willing to impose upon them to the degree that Dean --- has been imposed upon. A questionnaire which takes fifteen to twenty hours of time out of the schedule of an already overworked university administrator or professor is, in my opinion, highly unreasonable. I consider this a disservice to them as well as to sociological research. I will not, therefore, participate if the questionnaires are to remain as long as the one Dean --- has completed. ...I believe there is a limit to what we can justifiably ask from respondents. The questionnaire which Dean --- filled out exceeds this limit.

We must conclude, therefore, that since most of the respondents filled out the questionnaire without complaint, there is a good deal of sympathy for the objectives of the study.

Only a few of the representatives provided information about the school of education or about the respondent's professional orientation. It is now clear that our instructions did not sufficiently emphasize the need for such information. We intended, however, to study the questionnaires carefully for ambiguities and interesting leads which might be followed up by the representatives. As yet we have not reached this stage. Still, there were some illuminating remarks in the representative's letters. For example:

> I gather that their research interest is largely that of action research. I'm certain they are more teaching-oriented than research-oriented. This is true for the entire school.

Similarly, we received the following information from another representative:

> (The dean) represents the older school of education and is, therefore, more oriented toward the training of teachers than in educational research. There has been a fair amount of turnover in the department which I believe is due to this fact.

Another representative informed us of a study that we immediately wrote for information about:

> Professor --- in this department has evidently been contacted by the USOE to conduct a parallel study concerning the training and development of educational researchers.

Still another way in which the representatives were helpful was in following up on incomplete answers. We do not know how often this procedure was followed since we did not ask them to mention it to us, but it is clear that several representatives continued to press for complete answers. In other cases it seemed inadvisable to press the respondents further considering the great amount of time they had already given to the questionnaire. As one representative remarked:

> I note that he did not respond to items 2.3 and one line of 2.4. I have not gone back to pressure him on these as I can understand the difficulty and would categorize them as deliberate "decline to state" rather then negligent omissions. Otherwise his responses ring true.

Incidentally, all of the comments we received from the field personnel were attached to the questionnaire so that they would be highly visible when we studied each school intensively. These comments have already proved useful in editing the questionnaire for coding.

Some concluding observations

On the whole, our utilization of field representatives has proved extremely helpful, whether it has been a matter of locating the appropriate respondents, overcoming their reluctance to participate, or illuminating the issues that are covered in the questionnaire. The main drawback has been the great amount of administrative work involved, which diverted the project director from other tasks. Perhaps the solution would be to assign the work to an administrative secretary or other specialist who is able to make the critical decisions that are required. Such a person would have to be thoroughly familiar with the objectives of the study, able to correspond clearly and concisely, and willing to keep accurate records of the status of each representative's work.

The clearest proof of the value of the representatives with regard to improving the return-rate of questionnaires is available from our records. We mailed questionnaires directly to the respondents in 16 of the schools* where we were unable to locate field representatives. Ten of these questionnaires were the long version for deans without research coordinators; in the remaining 6 schools without representatives there were 12 persons who received shorter questionnaires (questionnaires intended for deans in these schools were two-thirds as long as those intended for their research coordinators).

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* Does not include 3 schools in the New York area where the project director mailed questionnaires and telephoned. Visits were made to 3 other New York schools.

Table 1 shows the percentage of questionnaires which were returned before extensive follow-ups were conducted by mail. We have shown return rates according to type of respondent and according to whether we used a field representative for the school. Since we would expect the length of the questionnaire also to be a factor in the return-rate, we have also included the number of pages in each of the three versions of the questionnaire.

Table 1: Return-Rates for Three Types of Questionnaires according to the Use of Field Representatives*

	Deans in schools without coordinators (26pp)		Schools with coordinators			
			Deans (16 pp)		Coordinators (24 pp)	
	Rep.	No rep.	Rep.	No rep.	Rep.	No rep.
% Returned:	49%	10%	73%	33%	80%	50%
Sent:	(59)	(10)	(30)	(6)	(30)	(6)

* Schools in the New York City area which were visited or phoned by the project director are excluded from this table.

It is obvious that the representatives improved our return-rates considerably, regardless of whether the respondent was a dean or a coordinator. Further, the advantage of the representatives over the mailed questionnaires is the same for long and short questionnaires among deans, as can be seen from the fact that the percentage differences between return-rates for each type of dean is the same (39% and 40%). On the other hand, although coordinators received a questionnaire which was only 2 pages shorter than the one intended for deans without coordinators, they were more likely than the deans to complete their questionnaires, regardless of the presence of a representative.** No doubt, this is due to the greater relevance of the survey to their work, and perhaps also to their having more time than deans. In sum, our findings clearly demonstrate the value of field representatives in insuring that completed questionnaires are returned.

** Where representatives were present, however, the difference between the returns of deans and coordinators is smaller.

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH
605 WEST 115th STREET

LETTERS SENT TO DEPARTMENT CHAIRMEN

In connection with a national study of the organization of educational research in the United States, supported by the Cooperative Research Program of the U.S. Office of Education, we are experimenting with a new method of conducting the field work involved in our survey of schools of education. Our plan is to engage the services of a junior faculty member in contacting respondents and performing other liaison duties at each university. The reasons for this approach, together with other details of the assignment, are described in the enclosed letter, which will be sent to persons recommended to us.

We would appreciate receiving your recommendation of an able junior colleague who might be interested in participating in the field work at your university. A member of a social science department would perhaps be most suitable, preferably someone who is familiar with sociological surveys.

A postcard is enclosed for your reply. We are looking forward to hearing from you.

Very sincerely,

Paul F. Lazarsfeld
Principal Investigator

Sam D. Sieber
Project Director

Enc. (2)

E-20

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH 605 WEST 115th STREET

Self-addressed postcard sent to department chairmen

For field representative on your study of educational research, I recommend:

(Name)

(Address)

____
(your name and school)

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH 605 WEST 115th STREET

LETTER SENT TO PROSPECTIVE

FIELD REPRESENTATIVE

You have been recommended to us as someone who might wish to participate in the field work connected with our current study of the organization of educational research, supported by the U.S. Office of Education. A brief description of the project is enclosed. The main phase of the project consists of the questionnaire survey of deans of schools of education (or chairmen of departments where schools do not exist), and the director and other personnel associated with bureaus of educational research.

We are trying out a somewhat unusual method of field work because of the nature of our survey. Since the questionnaires will have to be quite lengthy and detailed, we have felt that a response by mail would be very small. The large number of highly structured items, however, also renders personal interviews inappropriate. We have decided, therefore, to rely on personal contacts for the purpose of explaining the study and urging cooperation, and then leaving the questionnaire to be picked up later and returned to our office.

There may be other tasks which we will ask the field representative to handle, such as the collection of research reports and other materials from the bureaus, and inquiries about informal arrangements for research. The extent of such tasks will depend upon the scope of the research program found in the schools of education.

An honorarium of thirty dollars will be provided for each dean and for each bureau which is contacted. If you are interested in participating in the survey, let us know at your earliest convenience. We will then send you more detailed instructions, including a listing of respondents and bureaus, and also the questionnaires.

Very sincerely,

Paul F. Lazarsfeld
Principal Investigator

Sam D. Sieber
Project Director

E-22

Columbia University in the City of New York | New ~~York, N.~~Y. 10025

BUREAU OF APPLIED SOCIAL RESEARCH 605 WEST 115th STREET

THE ORGANIZATION OF EDUCATIONAL RESEARCH IN THE U.S.

The Bureau of Applied Social Research, Columbia University, has recently begun work on a project entitled "The Organization of Educational Research in the United States," sponsored by the Cooperative Research Program of the U.S. Office of Education and directed by Professor Paul F. Lazarsfeld and Dr. Sam D. Sieber. The objective will be to investigate features of educational research which affect recruitment, training, career lines, and output, with special attention to the problems and prospects of educational research bureaus affiliated with universities.

Approximately 70 educational research bureaus will be studied. Institutional questionnaires will be filled out by officers of these organizations, and personal interviews will be conducted with about 10 directors. Deans of graduate schools of education will also receive a questionnaire on the school's research program. Questionnaires on the origins and career aspirations of staff and students will be distributed to all participants in the bureaus. Observations of the flow of work will be carried out in a sample of institutes.

Further, educational research publications will be subjected to content analysis, including criteria of evaluation. The grants given by the major funding agencies for educational research will be scrutinized for information about applicants, their organizational settings, and their proposals. Directors of the major research organizations outside the universities will be interviewed, and the relations of these organizations to the university training program will be examined. Historical case studies of the main institutes in the field will also be developed, with special attention to periods of flowering and decline and to the movement of top personnel.

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH 605 WEST 115th STREET

Self-addressed postcard sent to recommended persons

Please check below whether you are interested in participating in the field work connected with the study of educational research.

Yes ______

No ______ IF NO: Could you recommend someone else in the department of sociology who might be interested?

____
(name of recommended person)

____
(your name and school)

E-24

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH
605 WEST 115th STREET

LETTER SENT TO FIELD REPRESENTATIVES

We very much appreciate your consenting to help us with the field work connected with our study of graduate schools or departments of education.

Enclosed you will find instructions for carrying out the first phase of the field work. The first paragraph of the instructions contains the names of the respondents. Also enclosed is the questionnaire(s) and an envelope for returning them to the Bureau. Do not hesitate to write us if you have any questions or problems.

The questionnaires for directors of research bureaus and other personnel in the bureaus have not been formulated yet, and therefore we cannot send them to you until the fall. If you will be unable to serve as field representative at that time, let us know so that we can make other arrangements. If possible, please recommend someone who could take your place. We hope, of course, that you will be able to help us again in the fall.

Yours sincerely,

Sam D. Sieber
Project Director

Paul F. Lazarsfeld
Principal Investigator

SDS:oh
Enclosures

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH

605 WEST 115th STREET

INSTRUCTIONS FOR FIELD REPRESENTATIVES
(Columbia Survey of Graduate Schools of Education)

1. Please begin by familiarizing yourself with the questionnaire(s) which is enclosed. Then make an appointment with the following individual(s):

   We are still working on the questionnaires intended for bureau personnel, including the director; hence, their names are omitted from this list. The green questionnaire is intended for deans or chairmen of departments, and the blue one (if enclosed) for coordinators of faculty research or for chairmen of research committees where they exist. (The chairmen of research committees are being queried only where coordinators do not exist; therefore, do not be confused by the presence of a faculty research committee for which no questionnaire is enclosed.)

2. When you visit the respondent, briefly explain the purpose and scope of the study (based on our brief description). It would be well to mention the sponsorship of the Office of Education, the location of the project at Columbia University, and the directorship of Professor Lazarsfeld. You may also point out that the questionnaire will be handled with the strictest confidence, and that only a few staff members on the project will know the identity of the respondent. (If the respondent wishes to seal the questionnaire in some way so that you yourself will not read it, this is permissible; although it would be better if you could look over the questionnaire after it is filled out so that unanswered questions could be followed up before mailing it to our office. This obviously is a matter that must be handled with tact, and is therefore left up to your discretion.)

3. After introducing the study, let the respondent read the cover letter in your presence since he may have a question about it. Note that in the final paragraph of the cover letter we promise a copy of our book, Organizing Educational Research, upon receipt of the questionnaire. We do not wish to give out the book before the questionnaire is answered, however, because of the bias that might result from reacting to the book. If the respondent mentions having already read the book, make a note and let us know when you return the questionnaire. (Those who have already read it will also be given a copy of they so desire.)

4. Offer to assist the respondent by clarifying any parts of the questionnaire which seem bothersome on initial inspection. You might give him your telephone number so that he can contact you if necessary. If there are unresolved problems about how to respond to particular questions, let us know about this also, but advise the respondent to answer as best he can.

E-26

(Instructions - cont.)

Urge him to write his comments on additional sheets of paper if he runs out of space in the questionnaire.

Inform him that we would appreciate his completing the questionnaire in the next few days, and that you will call before returning to pick it up. If he does not specify a time, we would advise waiting about a week before making the call.

5. It is very important that the individual(s) named above fills out the questionnaire himself, with the exception of Section I in the Deans' questionnaire entitled "Institutional Data". This section may be filled out by anyone familiar with enrollment statistics and other facts about the school or department of education. And you might even suggest that this first section be filled out by an assistant in order to ease the burden on the Dean.

   The remainder of the questionnaire, however, should be filled out by the designated person. This person might wish to refer the questionnaire to an assistant or to a faculty member who is more familiar with the research activities in the school or department, but since attitude questions are included, it is necessary to get the responses of the person named. He may wish to confer with someone else about objective information, of course, and this should be encouraged for the sake of accuracy.

6. Point out that we are also interested in receiving any materials that describe or reflect the faculty research which is being carried on, or which clarify the facilities and arrangements for research. (This point is mentioned at the end of the questionnaire, but it is advisable to remind the respondent.) If important materials are not available, but are published, obtain the appropriate references so that we can look them up. If you have to pay for some of the materials, or need to reproduce not more than about fifty pages, we shall reimburse you accordingly.

7. After picking up the questionnaire(s), look ot over for unanswered questions if the respondent does not object to your reading it, and try to get the questions answered or find out why they can't be answered. Mail the questionnaire in the envelope which we have provided. Mail the other materials separately if a single package is too bulky.

8. It would be helpful if you could write a brief account of your visist with the respondent. Was he hostile to the survey, did he seem informed about the types of information we ask for, did he seem eager to articulate his opinions to you? Were there any important points that he made to you about any aspect of the survey that might help us to understand his institution or his responses to the questionnaire?

Note: If you are unable to get the respondent's cooperation, let us know immediately, explaining the problem to us. We shall send a special letter urging participation. Of course, this should only be a last resort after other efforts have failed.

F1

APPENDIX F

QUESTIONNAIRE

(for deans or chairmen of graduate schools or departments of education) 1-1 2-1

I. INSTITUTIONAL DATA 3: 6:

1.1 Name of School ______________________________

1.2 Please provide the following figures for new graduate students in education for the academic year of 1963-64.

__________ Applied for admission to graduate school 9:

__________ Accepted for admission 13:

__________ Actually registered 17:

1.3 Is either a teaching certificate or professional experience in the schools a formal requirement for admission to the graduate program? *(Check the appropriate box)*

Teaching certificate ☐ 1
Professional experience ☐ 2 21:
Neither ☐ 3

1.4 What is the number of students currently registered with the graduate school or department of education?

	In residence	*Not in residence*	
Taking courses	__________	__________	23: 26:
Not taking courses	__________	__________	29: 32:

1.5 What is the total number of students now registered as working for the doctorate in the school or department of education?

	Ed.D.	*Ph.D.*	
No. of students:	__________	__________	35: 38:

1.6 How many students are currently working on their doctoral dissertations in the school or department of education?

__________ *no.* 41:

1.7 How many faculty members in the school or department of education are currently supervising doctoral dissertations?

__________ *no.* 44:

1.8 How many students in education received the doctorate during the past academic year? __________ *no.* 47:

1.9 Of the total number of doctoral degrees awarded by the university last year, approximately what percentage were received by students of education? __________% 50:

1.10 Are any of the courses which are required for doctoral students of education offered only in a department outside the school or department of education?

1 ☐ Yes   2 ☐ No 52-

1.11 IF YES: Which departments? 53: 56-X

1.12 Please estimate the proportion of doctoral recipients in the past three years whose **first position** after receiving the degree was in each of the following fields.

Per cent

In school systems

______ Administration 57:

______ Teaching

______ Guidance or counseling 59:

______ Research

In colleges or universities

______ Administration 61:

______ Admissions office

______ Primarily teaching 63:

______ Primarily research

______ Primarily field services 65:

Research elsewhere

______ State Department of Education

______ Other outside research agencies 67:

______ **All other fields (which?)** ______________________________

100%

1-1
2-2
3:
6:

1.13 Is the doctoral program under the administrative control of the **college of education**, or is it under the control of the **graduate college?**

1 ☐ College of education 2 ☐ Graduate college 9-

1.14 How many persons are teaching courses to **graduate** students in the school or department of education, either full-time or part-time? (Hereafter we shall refer to this group as the "faculty.") 10:

______ *no.*

1.15 About how many faculty members in the graduate school or department of education received **most of their training** for their highest degrees **outside** of any school or department of education? 13:

______ *no.*

1.16 Are there any departments or similar divisions within the graduate school or department of education in which the **majority of the faculty** received most of their training for their highest degrees **outside** of any school or department of education?

1 ☐ Yes 2 ☐ No 16-

IF YES: Which departments or divisions? 17:

F 3

II. RESEARCH AND OTHER GOALS OF THE GRADUATE PROGRAM

2.1 **Since the term "educational research" is used in a variety of ways, it is often difficult to know what a person means by it. To which of the following kinds of activity do you ordinarily apply the term "educational research"?**

(Check as many as you wish)

a ☐ **Collecting statistics on school practices and educational outcomes, sometimes called "school status studies."** **20:**

b ☐ **Designing new curricula and methods of instruction.**

c ☐ **Evaluating the effectiveness of new curricula and methods.** **22:**

d ☐ **Local school surveys (curriculum, financial, plant, etc.)**

e ☐ **Investigating factors which affect the teaching-learning process in the classroom.** **24:**

f ☐ **Disseminating new curricula, methods of instruction, or other school practices.**

g ☐ **Investigating factors which affect school administration.** **26:**

h ☐ **General psychological studies of human learning or development.**

i ☐ **Presenting evidence to legislators of the need for greater support for the schools.** **28:**

j ☐ **Developing new tests and measurements.**

k ☐ **Analyzing the key concepts or philosophical assumptions underlying current educational issues.** **30:**

l ☐ **Studying the educational research journals for lecture materials.**

2.2 **Which of the above activities do you feel are most important for the long range improvement of education, regardless of whether you have checked the activity as "research". (Write the appropriate letters in the spaces below in order of their importance.)**

______ 1st **______ 2nd** **______ 3rd** **32:**

2.3 What do you consider to be the **best pieces of research** on education which have been carried out in the past 10 years?

(Please give descriptive titles and names of the investigators, if possible.)

Best one in your institution *Best one elsewhere* 35:

2.4 Graduate schools or departments of education vary according to the rank order of **field service, teaching,** and **research** as responsibilities of the faculty. There may also be disagreement within the same school about the relative emphases that should be placed on these activities. To the best of your knowledge, how would the groups listed below rank the three activities in your school? (Hereafter the term "research" will be used to mean **empirical** research, as distinguished from field services and library research.) 38-X

(Rank 1 to 3 for each person or group with 1 as most important.)

Groups whose opinions you are asked to guess	*Field Service*	*Teaching*	*Research*	
EXAMPLE: Researchers	2	3	1	
Education faculty members				39:
Department chairmen				42:
Academic faculty or administration				45:
Dean of the entire graduate faculty				48:
The president of the university				51:
The trustees of the university				54:
The State legislature				57:
Funding agencies outside the university				60:
Public school systems				63:
Yourself				66:

1-1
2-3
3:
6:

2.5 **There are many forces, both inside and outside schools of education, which shape their goals. In your judgment, which of the following groups have most *affected* the balance of emphasis between teaching, field service, and research in your institution, either directly or indirectly, during the past five years?**

(Please check *no more than five*)

- **0 ☐ Faculty members in education** 9:
- **1 ☐ Department chairmen in education** 11:
- **2 ☐ Academic faculty or administration (i.e., outside education)** 13:
- **3 ☐ Dean of the entire graduate faculty**
- **4 ☐ The university president**
- **5 ☐ The university trustees**
- **6 ☐ The State legislature**
- **7 ☐ Funding agencies outside the university**
- **8 ☐ Public school systems**
- **9 ☐ Yourself**
- **X ☐ Other (which?)** ______________________________

2.6 **On the whole, which type of *preparation* receives the *greatest* emphasis in your graduate school or department of education?**

- **1 ☐ For research** 15-
- **2 ☐ For college teaching**
- **3 ☐ For college administration**
- **4 ☐ For public school administration**
- **5 ☐ For public school teaching**

2.7 If an opening occurred for someone to teach a graduate course in each of the major fields listed below, which of the following persons would you prefer to hire?

Use this code to indicate the type of person, and write the appropriate numbers in the spaces at the bottom.

A professor trained in a school of education	A professor trained **outside** a school of education
1 - Who has mostly **taught** in the field.	3 - Who has mostly **taught** in a related field.
2 - Who has mostly **done research** in the field.	4 - Who has mostly **done research** in a related field.

5 - A school practitioner who has a **great deal of experience** in the field.

6 - No particular preference.

Presumed opening in:

________ Educational administration 16:

________ Guidance and counseling

________ History of education 18:

________ Educational sociology

________ Child development 20:

________ Psychology of learning

________ Methods of educational research 22:

________ Special education

Curriculum and teaching in:

________ Language arts 24:

________ Social studies

________ Natural sciences and mathematics 26–

2.8 Interchange between schools or departments of education and other divisions in the university are achieved in a variety of ways. Which of the following arrangements **now exist** with (1) **academic** departments, and (2) other **professional** schools in the university; and which would you **like** to see established?

	Now exist with:		*Would like to see established with:*		
	Aca. depts.	*Prof'l schools*	*Aca. depts.*	*Prof'l schools*	
Participation of non-education professors on examination committees for the doctorate.	☐	☐	☐	☐	27:
Participation of non-education professors in the selection of the faculty of education.	☐	☐	☐	☐	31:
Interdisciplinary committees or seminars which are concerned with scholarly issues.	☐	☐	☐	☐	35:
Joint **teaching** appointments.	☐	☐	☐	☐	39:
Joint **research** appointments.	☐	☐	☐	☐	43:
Visiting professors from other universities for **teaching**.	☐	☐	☐	☐	47:
Visiting professors from other universities for **research**.	☐	☐	☐	☐	51:
Other types of interchange (which?) ______________________________	☐	☐	☐	☐	55:

2.9 In general, how **fruitful** have interchanges been with the **academic** departments in the university; what **problems** have been encountered, if any; and **what directions** would you like future interchange to take?

59:

61-X

III. ARRANGEMENTS FOR RESEARCH AND SERVICE

We are particularly interested in obtaining information about the faculty research program. Separate questionnaires are being distributed to directors of research bureaus, research committees, and coordinators of faculty research. In the present questionnaire we are mainly concerned with the overall program and its administrative arrangements.

3.1 **To the best of your knowledge, how many faculty members in the graduate school or department of education are presently providing field services to local school systems, and how many would you like to be providing field services (i.e., school surveys, consultation, test scoring or administration, or workshops and in-service courses)? Presently:________ Would like:________** 62: 64:

3.2 **It is sometimes claimed that the desire of school systems for field services draws personnel and resources away from educational research. Do you consider this a problem in your institution? If not, why? If so, how do you think the problem could be alleviated?** 66:

3.3 **Suppose the State Department of Education had the facilities and the legislative authority to provide many of the services to local school systems which are now provided by the university – how would you feel about its assuming more than half of the service work in which the faculty of the graduate department is now engaged? What are the reasons for your opinion?** 68:

3.4 **Is teaching load reduced for faculty members in the graduate program who wish to do research (as distinguished from field service)?** 1 ☐ **YES** 2 ☐ **NO** 70–

3.5 **IF YES: Among all those who are doing research, about how many have their teaching load reduced by the following proportions?**

Reduction	***No. of faculty members***	
1-33%	_____	71:
34-50%	_____	73:
51-99%	_____	75:
100% (full time research)	_____	77:

1-1
2-4
3:
6-X

3.6 How seriously have the teaching resources of the graduate school or department of education been strained by reducing the teaching load for research? 7-

Very seriously ☐ 1
Fairly seriously ☐ 2
Only a little ☐ 3
Not at all ☐ 4

3.7 Are faculty members in the graduate program exempted from committee or other administrative tasks to do research?

1 ☐ YES 2 ☐ NO 8-

3.8 IF YES: About how many faculty members presently have this kind of exemption?

No. of faculty members ________ 9:

3.9 It is sometimes said that teaching commitments seriously interfere with a professor's research efforts. On the other hand, it is argued that a researcher should also teach so that students will benefit from his research work. How do you personally feel about this issue; and how is it handled in your institution?

11:

3.10 To the best of your knowledge, about what proportion of the faculty in the graduate school or department who have taken sabbaticals in the past five years have conducted research while on leave? ________% 13:

3.11 At the end of the sabbatical, does the administration review the research which was conducted while on leave?

1 ☐ Always 2 ☐ Frequently 3 ☐ Sometimes 4 ☐ Rarely 5 ☐ Never 15-

3.12 Are leaves of absence without pay given to qualified faculty members in the graduate school or department who wish to do research?

1 ☐ Yes 2 ☐ No 3 ☐ Depends (on what?) 16-

3.13 IF YES OR DEPENDS: About how many faculty members have taken such leaves in the past five years?

____
No. 17:

3.14 In which of the following areas, if any, would you like to see **more research** undertaken in the graduate school or department of education? (Check as many as you wish).

☐ School finance 19:

☐ Educational administration (other than finance) 21:

☐ Tests and measurements 23:

☐ Other research methodology 25:

☐ Guidance and counseling 27:

☐ Methods of instruction 29:

☐ Talent, creativity of students 31:

☐ Special education 33:

☐ Psychology of learning 35:

☐ Child development 37:

☐ Adolescent development 39:

☐ School-community relations 41:

☐ Teacher personality 43-

☐ Teaching as a profession

☐ History of Education

☐ Comparative education

Curriculum research in:

☐ Mathematics

☐ Natural sciences

☐ Social studies

☐ Reading

☐ Foreign languages

☐ Other language arts

☐ Business and distributive education

☐ Physical education

☐ Other (what?) ____________________

3.15 Please go back over the list and **double-check** those topics where you mainly had **higher education** in mind. 44-

3.16 Administrators at the school or departmental level may become involved in the research of faculty members in several ways, and the **amount** of involvement may vary greatly from school to school. Which of the following statements best expresses **your own view** of the appropriate role for administrators regarding faculty research; and which best expresses **the view of most of the faculty**. 45:

	Your own view (check one)	*Faculty's view* (check one)
a. Administrators should **facilitate, actively encourage,** and **direct** the faculty research program.	1 ☐	1 ☐
b. Administrators should **facilitate** and **actively encourage** faculty research, but should leave direction to the faculty.	2 ☐	2 ☐
c. Administrators should only **facilitate** faculty research.	3 ☐	3 ☐

3.17 Which of the above alternatives best describes the **present role** of the administration in the graduate school or department of education? (Write the appropriate letter a, b, or c below.) 47.

____
letter

48-X

3.18 If your graduate school or department of education were to receive about $200,000 for facilitating or conducting educational studies, or for preparing researchers, how would you like to see these funds used? 49:

IF THERE IS AN EDUCATIONAL RESEARCH BUREAU (Center, Institute, Office, or Lab School for research)

3.19 Would you like more faculty members to become associated with any research bureau which might exist? 51:

1 ☐ Yes 2 ☐ No 3 ☐ Depends (on what?):

3.20 Do you personally feel that a research bureau should primarily: 53-

1 ☐ Facilitate the research of non-bureau faculty

2 ☐ Facilitate the research of individuals on the bureau staff

3 ☐ Pursue a program of research which has been formulated by the bureau as a unit

IF THERE IS NOT AN EDUCATIONAL RESEARCH BUREAU (Center, Institute, Office, or Lab School for research)

3.21 Why is there no educational research bureau in your institution? 54:

3.22 Are there any plans for founding such a bureau in the future? If so, when is the bureau planned, what activities will it undertake, and how will it be administered? 56:

IV. GENERAL EDUCATIONAL OPINIONS AND PROBLEMS OF EDUCATIONAL RESEARCH

4.1 There are several issues pertaining to the graduate program in education which are receiving attention these days. Each of the following statements takes a position on one of these issues. Indicate the extent to which you agree or disagree with each statement by placing the appropriate number in the space provided.

1 – Strongly agree
2 – Mostly agree
3 – Undecided
4 – Mostly disagree
5 – Strongly disagree

a ___ Elementary school teaching is a profession, like law or engineering. 58:

b ___ The findings of educational research are generally of little help to the classroom teacher.

c ___ The Ph.D. should be a research degree and the Ed.D. should be a professional degree. 60:

d ___ We already know so much about the teaching-learning process that the main problem facing us is how better to disseminate this knowledge so that it is used in the schools.

e ___ The research techniques and methods used in educational research tend to lag behind those used in behavioral science generally. 62:

f ___ Teachers are better qualified to evaluate the results of their teaching than experts who are not in daily contact with the classroom.

g ___ The Ph.D. generally has higher prestige than the Ed.D. 64:

h ___ Teachers should be trained to do research on instructional methods in their own classrooms, sometimes called "action research."

i ___ Schools or departments of education generally have low prestige within the universities. 66:

j ___ Persons who wish to make a career of educational research should receive most of their research training from professors in the behavioral sciences outside schools of education.

4.2 Which three of the issues touched on above are most frequently discussed in your school as problems of the profession? (Write in the appropriate letters below.)

______ ______ ______ 68:

1-1
2-5
3
6:

4.2 The following is a list of factors that some people claim have hindered the advancement of educational research. If you think any of these has hindered educational research, place a check in the appropriate box. (Leave blank if you think it has not hindered research.)

Major hindrance	*Minor hindrance*		
☐	☐	The quality of research training provided in graduate schools or departments of education.	9:
☐	☐	The quality of research techniques and methods used in educational research.	
☐	☐	Intellectual ability of people doing research in education.	11:
☐	☐	Amount of financial support available for research.	
☐	☐	Kinds and amount of organizational provisions for research at universities, school systems, etc.	13:
☐	☐	Problems chosen for investigation by researchers.	
☐	☐	Lack of interest in educational research on the part of behavioral scientists outside schools of education.	15:
☐	☐	Educational philosophies and ideologies of researchers.	
☐	☐	Types of services and studies desired by school systems.	17:
☐	☐	Needs and interests of publishing companies.	
☐	☐	Amounts of teaching, administrative, and other non-research duties connected with jobs held by people in education.	19:
☐	☐	Rewards offered potential researchers to serve as speakers, editors, consultants, workshop participants, etc.	
☐	☐	Low standards for acceptance of research articles in journals.	21:
☐	☐	Lack of interest in research on the part of administrators of schools or departments of education.	
☐	☐	Lack of recognition and rewards for research accomplishment.	23:
☐ 1	☐ 2	Other (what?)______________________________ ____	

V. PERSONAL INFORMATION

5.1 Your name:____

5.2 What is your age?________________

5.3 **What type of institution did you attend for most of your undergraduate education? (Check only one.)** 25-

1 ☐ Two-year junior college

2 ☐ Two- or three-year normal school

3 ☐ Four year teachers college

4 ☐ Teacher preparation unit of a college

5 ☐ Teacher preparation unit of a university

6 ☐ Other unit of a university

7 ☐ Liberal arts college (not part of a university)

8 ☐ Other (please specify) ______________________________

5.4 **Did you receive most of your graduate training in a school or department of education, or in some other division of the university?** 26:

1 ☐ School or department of education

2 ☐ Other division (which?): ______________________________

5.5 **In what department or program did you do most of your graduate work?**

______________________________ 28:

5.6 **What degrees do you hold?** ______________________ 30:

5.7 **Have you ever been employed by a school system?**

1 ☐ Yes 2 ☐ No 32-

5.8 **IF YES: What position(s) and for how long?**

______________________	____________ 33:
(position)	*(no. of years)*
______________________	____________
______________________	____________

5.9 **What was your first job after obtaining your highest degree?**

______________________________ 35-

____

F15

5.10 **Aside from the work on your dissertation, what has been the longest period of time during which research was your primary activity?** 36-

1 ☐ At no time was research my primary activity

2 ☐ 1 to 6 months

3 ☐ 7 to 12 months

4 ☐ 13 to 24 months

5 ☐ More than 24 months

5.11 **If research was ever your primary activity: When was this and what did you do?**

37:

5.12 **Have you ever been a staff member of a research organization?**

1 ☐ Yes 2 ☐ No 39-

5.13 **IF YES: What was the title of the organization; and when were you a staff member?**

40:

5.14 **Are you currently engaged in research?** 1 ☐ Yes 2 ☐ No 42-

5.15 **IF YES: Would you briefly describe it?**

43:

45-X

5.16 **About how many research articles or monographs have you published since obtaining your highest degree?**

____
(Number) 46:

5.17 **Have you ever taught a course in the methods of educational research?**

1 ☐ Yes 2 ☐ No 48-

5.18 **IF YES: What was the course(s)?** 49-

5.19 What was your last position before becoming dean or department head?

______________________ ______________________ 50:

(Position) *(Location)*

5.20 Check the professional magazines which you regularly read:

☐ Administrative Science Quarterly

☐ American Journal of Sociology

☐ American Psychologist

☐ American Sociological Review

☐ Behavioral Scientist

☐ Comparative Education Review

☐ Educational and Psychological Measurement

☐ The Education Digest

☐ The Elementary School Journal

☐ The High School Journal

☐ Harvard Educational Review

☐ Higher Education

☐ History of Education Quarterly

☐ Journal of Abnormal and Social Psychology

☐ Journal of Applied Psychology

☐ Journal of Education

☐ Journal of Educational Psychology

☐ Journal of Educational Research

☐ Journal of Experimental Education

☐ Journal of Secondary Education

☐ Journal of Teacher Education 52:

☐ NEA Journal

☐ NEA Research Bulletin

☐ The Nation's Schools

☐ Phi Delta Kappan

☐ Psychological Abstracts

☐ Psychological Review

☐ Review of Educational Research

☐ School Review

☐ School and Society

☐ Sociology of Education

☐ Theory into Practice (Ohio State)

☐ Teachers College Record

☐ U.S. Office of Education Bulletin

☐ Others

5.21 In which professional associations are you most active?

56-

A. Please send us any materials which describe the faculty research program, for example, a list of faculty publications, or a history of research in your institution.

B. If you have reports which indicate the types of positions which doctorate recipients hold, we would appreciate receiving a copy.

C. Please enclose a list of your own publications, if readily available.

QUESTIONNAIRE

(for faculty research coordinators in graduate schools of education) 1-3 2-1 3:

I. RESPONSIBILITIES 6:

1.1 What is the title of your position inasmuch as it pertains to faculty research?

____

1.2 When was this position established, and when did you enter the position?

Established: 19____ Entered the position: 19____ 9- 10-

1.3 What were the circumstances that led to creation of the position, and what persons or groups were most responsible for its creation?

11-

1.4 What is the title of the administrative or faculty officer or group to whom you are directly responsible?

______________________________ 12-

1.5 Is there a committee or council for faculty research in the graduate school or department of education? 1 ☐ Yes 2 ☐ No 13-

1.6 **IF THERE IS:** How are responsibilities divided between your position and the committee?

14-

1.7 For a variety of reasons, it is sometimes difficult for administrators to keep informed about the research activities of the faculty. Which of the following channels do you use to keep abreast of the research of faculty members? (Check as many as you wish)

☐ Formal progress reports. 15:
☐ Financial reports.
☐ You periodically ask research workers about the status of their work. 17:
☐ You give advice to individuals on research problems which they bring to your attention.
☐ Incidental talk with research workers (at lunch, etc.). 19:
☐ The faculty grapevine.
☐ Other channels (which?) ______________________________ 21-

22:

1.8 **From the following list of activities, please check those for which you are solely or chiefly responsible, adding any other activities which are relevant.** ***(Check the boxes on the left.)***

- **a** ☐ **Seeking funds for faculty researchers.** 24:
- **b** ☐ **Collecting and disseminating information about financing of research.**
- **c** ☐ **Allocating university funds for research.** 26:
- **d** ☐ **Allocating outside funds for research.**
- **e** ☐ **Communicating the needs of the research program to the administration.** 28:
- **f** ☐ **Facilitating communications among researchers.**
- **g** ☐ **Formulating the goals of a faculty research program.** 30:
- **h** ☐ **Judging the adequacy of research proposals.**
- **i** ☐ **Securing new staff members to do research.** 32:
- **j** ☐ **Handling requests for released time to conduct research.**
- **k** ☐ **Encouraging faculty members to undertake research which is of general interest to scholars in education** 34:
- **l** ☐ **Encouraging faculty members to undertake research which is of immediate help to schools.**
- **m** ☐ **Gaining the assistance of scholars in other departments in the university in planning or executing research.** 36:
- **n** ☐ **Providing the facilities (other than funds) for researchers.**
- **o** ☐ **Assisting faculty members in writing proposals.** 38:
- **p** ☐ **Assisting faculty members with analytical problems which arise in their research.**
- **q** ☐ **Providing opportunities for students to participate in research.** 40:
- **r** ☐ **Directing or facilitating service studies for schools in the area.**
- **s** ☐ **Other responsibilities:** ____________________ 42–

1.9 **Approximately what proportion of your total university work is spent on all these activities taken together?**

_______ % 43:

45-X

1.10 Among those activities which you have checked above, which do you devote **most time** to? (Please list **no more than three** activities by writing the appropriate letters below.) 46:

____
(letters)

1.11 In your own opinion, which of the activities listed (in question ~~1.10~~ 1.8) **should receive greater emphasis** in the graduate school or department of education — regardless of how much time is presently devoted to them? (List as many as you would like by writing the appropriate letters.)

____________________ 49:
(letters)

1.12 How many **professional** assistants help you to perform the activities in which you are engaged? 52:

Full-time _______ no. Part-time _______ no. 54:

1.13 Are you provided with any special funds for this work? 56-

1 ☐ No 2 ☐ Yes (**IF YES:** How much this year? $______________) 57:

1.14 During the time you have had some responsibility for faculty research, have you introduced any **innovations** in terms of organization or activities? If so, please describe them briefly.

61:

1.15 Under which of the following circumstances, if any, have you ever intervened in an on-going study? *(Check as many as you wish)*

☐ An investigator was having difficulty analyzing his data. 63:
☐ A study was failing to meet its deadline.
☐ A project was having budgetary problems. 65:
☐ A project was having personnel problems.
☐ A sponsor or client was worried about the progress of a study. 67:
☐ You passed on information which seemed valuable to a study.
☐ Other circumstances: (which?)______________________________ 69:

____________ __________________________________

☐ Practically never intervened, regardless of circumstances. 71-

1-3
2-2
3:
6:

1.16 Since the term "educational research" is used in a variety of ways, it is often difficult to know what a person means by it. To which of the following kinds of activity do you ordinarily apply the term "educational research."

(Check as many as you wish)

a ☐ Collecting statistics on school practices and educational outcomes, sometimes called "school status studies." 9:

b ☐ Designing new curricula and methods of instruction.

c ☐ Evaluating the effectiveness of new curricula and methods. 11:

d ☐ Local school surveys (curriculum, financial, plant, etc.)

e ☐ Investigating factors which affect the teaching-learning process in the classroom. 13:

f ☐ Disseminating new curricula, methods of instruction, or other school practices.

g ☐ Investigating factors which affect school administration. 15:

h ☐ General psychological studies of human learning or development.

i ☐ Presenting evidence to legislators of the need for greater support for the schools. 17:

j ☐ Developing new tests and measurements.

k ☐ Analyzing the key concepts or philosophical assumptions underlying current educational issues. 19:

l ☐ Studying the educational research journals for lecture materials.

1.17 Which of the above activities do you feel are most important for the long term **improvement of education**, regardless of whether you have checked the activity as "research." (Write the appropriate letters in the spaces below according to their importance.)

______	______	______
1st	*2nd*	*3rd*

21:

1.18 What do you consider to be the **best pieces of research** on education which have been carried out in the past 10 years? (Please give descriptive titles and names of investigators, if possible.)

Best one in your institution *Best one elsewhere*

24:

NOTE: In the remainder of this questionnaire, the term "faculty" will be used to designate all persons who are teaching **graduate** students in the school or department of education, either full-time or part-time. The term "research" will be used to mean **empirical** research, as distinguished from field services and library research.

1.19 Graduate schools or departments of education vary according to the rank order of **field service, teaching,** and **research** as responsibilities of the faculty. There may also be disagreement within the same school about the relative emphases that should be placed on these activities. To the best of your knowledge, how would the groups listed below rank the three activities in your school?

(Rank 1 to 3 for each person or group with 1 as most important)

Groups whose opinions you are asked to guess	*Field service*	*Teaching*	*Research*	
EXAMPLE: **Researchers**	2	3	1	
Education faculty members	____	____	____	27:
Dean or head of the graduate school or department of education	____	____	____	30:
Department chairmen (if any)	____	____	____	34:
Academic faculty or administration (outside education)	____	____	____	36:
Dean of the entire graduate faculty	____	____	____	39:
President of the university	____	____	____	42:
The trustees of the university	____	____	____	45:
The State legislature	____	____	____	48:
Funding agencies outside the university	____	____	____	51:
Public school systems	____	____	____	54:
Yourself	____	____	____	57:

II. THE RESEARCH PROGRAM

2.1 Please rank the **three departments or divisions** in the graduate education program which are most actively engaged in research. Which department is **least** actively engaged?

Departments or divisions

1st: ________________________________ 60-

2nd: ________________________________ 61-

3rd: ________________________________ 62-

Least: ________________________________ 63-

2.2 When an opening occurs in a particular field or department with the main emphasis on empirical research (as distinguished from field service and library research), who plays a major role in screening candidates? (Please indicate the title or position of the persons involved) 64:

2.3 Have there been any difficulties recently in **hiring** new staff members who are enthusiastic about doing this kind of empirical research, or in **integrating** these staff members into the existing staff? If so, what was the problem, and in which department or division did it occur? 66:

2.4 Administrators at the school or departmental level may become involved in the research of faculty members in several ways, and the amount of involvement may vary greatly from school to school. Which of the following statements best expresses **your own view** of the appropriate role for administrators regarding faculty research; and which best expresses **the view of most of the faculty.**

	Your own view (check one)	*Faculty's view* (check one)	
Administrators should **facilitate, actively encourage,** and **direct** the faculty research program.	1 ☐	1 ☐	68:
Administrators should **facilitate** and **actively** encourage faculty research, but should leave direction to the faculty.	2 ☐	2 ☐	
Administrators should only **facilitate** faculty research.	3 ☐	3 ☐	

2.5 Which divisions in the graduate school or department of education give the best research training? 70:

2.6 Is there a training program for people who want to make research a career? If so, what is the title, and what are the main features of this program?

72-

1-3
2-3
3:
6:

2.7 **If your school or department of education were to receive about $200,000 for facilitating or conducting educational studies, or for preparing researchers, how would you like to see these funds used?**

9:

We are particularly interested in learning about the arrangements which exist in graduate schools or departments of education for facilitating research and service. Such arrangements may include relatively permanent bureaus with their own staff, teams of faculty members outside of such bureaus, or the projects of individual professors. While we realize that there may be a variety of arrangements within a single institution, it is necessary to have rather detailed information about each type. (Since we are sending separate questionnaires to research bureaus, we shall focus here on alternative arrangements.)

III. FIELD SERVICE BUREAUS

3.1 **Does the school or department of education maintain a bureau or similar organization which only provides field services for schools (i.e., school surveys, consultation, test scoring or administration, or workshops and in-service courses)?**

1 ☐ Yes 2 ☐ No (IF NO: Skip to Question 3.8) 11.

3.2 **IF YES: What is the title of each service bureau, when was it founded, and approximately how many faculty or staff members have been associated with it this year?**

Title	*Year founded*	*No. of faculty or staff*

12:

14:

If there are any major turning points in the history of the service bureau(s), we would appreciate your describing them.

16.

3.3 Does your position (described at the beginning of the questionnaire) carry any responsibilities for the field services provided by any bureau(s)? If so, please briefly describe your responsibilities.

17-

3.4 To the best of your knowledge, how well informed is most of the faculty in the graduate school or department of education about the activities of the service bureau(s)?

1 ☐ Well informed
3 ☐ Poorly informed
2 ☐ Somewhat informed
4 ☐ Can't say

18-

3.5 On the whole, how do most faculty members in the graduate school or department of education feel about becoming associated with a service bureau?

1 ☐ They are eager to become associated
3 ☐ They resist association
2 ☐ They are mostly indifferent
4 ☐ Can't say

19.

3.6 IF "INDIFFERENT" OR "RESIST": Why is that?

20.

3.7 Would you like more faculty members to become associated with a service bureau?

1 ☐ Yes 2 ☐ No 3 ☐ Depends (on what?):

21:

3.8 It is sometimes claimed that the desire of school systems for field services draws personnel and resources away from educational research. Do you consider this a problem in your institution? If not, why? If so, how do you think the problem could be alleviated?

23:

F25

IV. RESEARCH BUREAUS

In the following section we are interested in organizations which have been set up for research (as distinguished from field services to local schools). These arrangements are sometimes called bureaus, institutes, offices or lab schools, and conduct more than one study. In the following questions, we shall use the term "bureau" to designate any arrangement of this kind.

4.1 Does the school or department of education maintain a bureau (as defined above) which conducts educational research?

1 ☐ **Yes** 2 ☐ **No** **(IF NO: Skip to Section V)** 25.

4.2 IF YES: Does your position carry any responsibilities for the work of any research bureau(s)? (If the bureau also provides services, answer only for the research program or division of the bureau.)

1 ☐ **Yes** 2 ☐ **No** 26.

4.3 IF YES: Please describe these responsibilities, and state how they are divided with the director of the bureau.

27:

4.4 To the best of your knowledge, how well informed is the faculty in the graduate school or department of education about the activities and goals of the research bureau(s)?

1 ☐ **Well informed**
2 ☐ **Somewhat informed**
3 ☐ **Poorly informed**
4 ☐ **Can't say** 29.

4.5 On the whole, how do most faculty members in the graduate school or department of education feel about becoming associated with the research bureau(s)?

1 ☐ **They are eager to become associated**
2 ☐ **They are mostly indifferent**
3 ☐ **They resist association**
4 ☐ **Can't say** 30.

4.6 IF "INDIFFERENT" OR "RESIST": Why is that?

31:

4.7 **Would you like more faculty members to become associated with a research bureau?**

1 ☐ **Yes** 2 ☐ **No** 3 ☐ **Depends (on what?)** 33:

4.8 **Do you personally feel that a research bureau should primarily:**

1 ☐ **Facilitate the research of non-bureau faculty** 35-

2 ☐ **Facilitate the research of individuals on the bureau staff**

3 ☐ **Pursue a program of research which has been formulated by the bureau as a unit**

4.9 **Why do you feel this way?**

36:

4.10 **Do you recall any major research arrangements in the past which have since been terminated? If so, please give the following information.**

Name of former arrangement	*From (year) to (year)*	*Reason terminated*

38:

40-

41-X

V. RESEARCH TEAMS OUTSIDE OF BUREAUS

In many schools ad hoc groups of faculty members make up research units or teams which remain unattached to any research bureau. These vary in nature: they may undertake one or more studies, may or may not have a title, and are usually less permanent than a bureau. In the following questions, we shall use the term "research team" to designate any arrangement of this kind.

5.1 Are there any research teams in the graduate school or department of education at present?

1 ☐ **Yes** 2 ☐ **No** **(IF NO: Skip to Section VI)** 42-

5.2 IF YES: To the best of your knowledge, how many of these teams plan to conduct:

No. of teams

________ **One study only** 43:

________ **More than one study, but at different times** 45:

________ **More than one study concurrently** 47:

________ **Don't know their plans** 49:

________ **Total number of research teams** 51:

5.3 How many faculty members in the graduate school or department outside of any research bureau are members of research teams?

No. of faculty members ________ 53:

5.4 How many research teams are composed of personnel from –

	No. of teams	
Another university?	________	55:
Another professional school within your own university?	________	57:
An academic department within your own university (outside of education)?	________	59:
Other combinations (which?)		
______________________________	________	61:
______________________________	________	

1-3
2-4
3:
6:

5.5 Thinking only of those research teams which are composed **entirely** of faculty members in **your own** graduate school or department of education, how many teams represent —

No. of teams

Different **academic fields** (e.g., educational sociology and psychology) ________ 9:

Different **specialties** in professional education (e.g., guidance, administration, elementary education)? ________ 11:

An educational **specialty** and an **academic field**? ________ 13:

5.6 What is the budget of the **smallest** and of the **largest** team project; and what is the **average** (mean) budget of all team projects?

15:
19:

Smallest $__________ Largest $ __________ Average $ __________ 23:

5.7 How many research teams have **students** as assistants, using material for dissertations, etc.?

No. of **teams**__________ Does not apply to our situation ☐ 27-

5.8 How many graduate students are working with these research teams this year?

No. of **students**__________ Does not apply to our situation ☐ 28-

5.9 Who is considered by the administration to be **responsible** for the successful completion of **most** team projects?

1 ☐ The project members exclusively, or

Project members with: 29-

2 ☐ Department chairmen

3 ☐ Dean or assistant dean

4 ☐ A research committee

5 ☐ Yourself

5.10 **IF THERE IS A RESEARCH BUREAU:** To the best of your knowledge, why have the research teams remained unattached to any bureau of educational research? (Here we are particularly interested in the comparative advantages of team **versus** bureau research **as seen by the faculty.**) 30:

F29

VI. INDIVIDUAL PROJECTS OUTSIDE OF RESEARCH BUREAUS

6.1 How many studies are being conducted in the graduate school or department by **individual** professors who are **neither in bureaus nor in research teams**?

No. of studies ___________ (IF NONE: Skip to Question 6.6)

6.2 What is the budget of the **smallest** and of the **largest** individual project; and what is the **average** (mean) budget of all individual projects?

Smallest $___________ Largest $ ___________ Average $ ___________

6.3 What is the topic of the **largest** project being conducted by a single investigator, and what is the investigator's **name**? (We would like to have this information so that we can communicate directly with the individual at a later time if the need arises.)

______________________________ ______________________________

(Topic of largest project) *(Name of investigator)*

6.4 How many individual projects have students as assistants, using material for dissertations, etc.?

No. of projects _________ Does not apply to our situation ☐

6.5 How many graduate students are working with individual project this year?

No. of students _________ Does not apply to our situation ☐

6.6 Sometimes a student works on a dissertation which closely reflects the current research interest of his adviser. How many faculty members in the graduate school or department of education have supervised dissertations of this kind during the past year?

No. of faculty members _________

6.7 **IF THERE IS A RESEARCH BUREAU:** To the best of your knowledge, why have individual researchers remained unattached to any bureau of educational research? (Here we are particularly interested in the comparative advantages of individual **versus** bureau research **as seen by the faculty**.)

6.8 Are there any arrangements for research which have not been covered above? If so, please describe them.

1-3 F30
2-5
3:
6:

VII. ALL STUDIES OUTSIDE OF RESEARCH BUREAUS:

7.1 **In which of the following areas, if any, is research now being undertaken in the school or department of education (either in teams or by individuals, but outside of bureaus)? And in which areas would you like to see more research? (Check as many as you wish)**

Now	*Would like more*		
☐	☐	**School finance**	9:
☐	☐	**Educational administration (other than finance)**	11:
☐	☐	**Tests and measurements**	13:
☐	☐	**Other research methodology**	15:
☐	☐	**Guidance and counseling**	17:
☐	☐	**Methods of instruction**	19:
☐	☐	**Talent, creativity of students**	21:
☐	☐	**Special education**	23:
☐	☐	**Psychology of learning**	25:
☐	☐	**Child development**	27:
☐	☐	**Adolescent development**	29:
☐	☐	**School-community relations**	31:
☐	☐	**Teacher personality**	33:
☐	☐	**Teaching as a profession**	35:
☐	☐	**History of Education**	37:
☐	☐	**Comparative education**	39:
		Curriculum research in:	
☐	☐	**Mathematics**	41:
☐	☐	**Natural sciences**	43:
☐	☐	**Social studies**	45:
☐	☐	**Reading**	47:
☐	☐	**Foreign languages**	49:
☐	☐	**Other language arts**	51:
☐	☐	**Business and distributive education**	53:
☐	☐	**Physical education**	55:
☐	☐	**Other (what?)**	57:

Please go back over the list and double-check the boxes where you mainly had higher education in mind.

59-

31

7.2 How many faculty members in the graduate school or department of education **not associated with a bureau are presently** doing research; and how many would you **like** to be doing research this year? 60: 62:

Presently: ________ Would like: ________

7.3 Do you believe that the proportion of faculty members doing research **outside of any bureau** will shift to what you regard as desirable in the next three years?

1 ☐ Yes 2 ☐ No **IF NOT:** Why? 64:

7.4 How many faculty members **not associated with any bureau** are presently providing field **services** to school systems; and how many would you like to be providing field services this year (i.e., school surveys, consultation, test scoring, workshops, etc.)? 66: 68:

Presently: ________ Would like: ________

VIII. SUPPORT FOR RESEARCH OUTSIDE OF BUREAUS

The following questions refer to research which is undertaken by faculty members **who are not associated with any research bureau.**

8.1 What is the average rate of overhead on **grants** and on **contracts** for research which are received from outside agencies? (If there is no set policy, check here: ☐)

Grants	*Contracts*	
________ %	________ %	70: 72:

8.2 Which of the following receives overhead funds? (If no set policy, check here: ☐)

(check one)

1 ☐ The university 74-

2 ☐ The school or department of education

3 ☐ The division within the school or department where the research is conducted

4 ☐ Other (which?) ________

8.3 Approximately what proportion of the research projects supported by outside agencies received **supplemental funds from the university** in the past fiscal year (i.e., university contribution)?

________% of projects received university funds 75:

☐ Does not apply to our situation

1-3 F32
2-6
3:

8.4 What proportion of the **total cost of all such projects** was provided by the university in the past fiscal year? 6:

________% of total cost 9:XX

☐ Does not apply to our situation 11:

8.5 About how many research proposals were originated by faculty members in the graduate school or department this past fiscal year **outside of any research bureau;** and how many of these proposals were successful in obtaining **financial support?** 13:

Number originated:________ Number supported:________ 15:

☐ Does not apply to our situation

8.6 In the past fiscal year, which of the following possible sources financed proposals originating with and done by faculty **outside of any research bureau?** (If none originated, check here: ☐.)

(Please estimate the percentage of funds from each source.)

%

________ University research funds 17:

________ School or department of education research funds 19:

________ State government 21:

________ Federal government 23:

________ Foundations 25:

________ Local school systems 27:

________ Professional organizations 29:

________ Other (please specify) ______________________________ 31:

100%

8.7 Would you like the percentage of funds from each source to **increase, decrease,** or **remain the same** in the future? (Check the appropriate boxes below.)

Increase	*Same*	*Decrease*		
☐	☐	☐	University research funds	33:
☐	☐	☐	School or department of education research funds	
☐	☐	☐	Federal government	35:
☐	☐	☐	Foundations	
☐	☐	☐	Local school systems	37:
☐	☐	☐	Professional organizations	
☐	☐	☐	Other (please specify) ____________________	39-
1	2	3		40-)

F33

8.8 **Which of the following funding agencies outside the university are currently supporting research in the graduate school or department of education outside of any research bureau? (If none, check here: ☐.)**

☐ **The Cooperative Research Program, U.S.O.E.** 41

☐ **National Defense Education Act**

☐ **National Science Foundation** 43

☐ **National Institute of Mental Health**

☐ **Carnegie Corporation** 45

☐ **Ford Foundation**

☐ **Kellogg Foundation** 47

☐ **Other (which?)** ______________________________

8.9 **Please describe any changes in the research program of the graduate school or department of education which are planned for the future. (In order to project future developments in the nation, we need to learn about specific intentions. We would therefore appreciate your giving careful attention to this question.)**

49

8.10 **Which graduate schools or departments of education in the nation are doing what you consider to be the most competent and worthwhile research?**

______________________________ 52

______________________________ 55

______________________________ 58

IX. GENERAL EDUCATIONAL OPINIONS AND PROBLEMS OF EDUCATIONAL RESEARCH

9.1 There are several issues pertaining to the graduate program in education which are receiving attention these days. Each of the following statements takes a position on one of these issues. Indicate the extent to which you agree or disagree with each statement by placing the appropriate number in the space provided.

1 – Strongly agree
2 – Mostly agree
3 – Undecided
4 – Mostly disagree
5 – Strongly disagree

a ___ Elementary school teaching is a profession, like law or engineering. 60:

b ___ The findings of educational research are generally of little help to the classroom teacher.

c ___ The Ph.D. should be a research degree and the Ed.D. should be a professional degree. 62:

d ___ Teachers are better qualified to evaluate the results of their teaching than experts who are not in daily contact with the classroom.

e ___ We already know so much about the teaching-learning process that the main problem facing us is how better to disseminate this knowledge so that it is used in the schools. 64:

f ___ The research techniques and methods used in educational research tend to lag behind those used in behavioral science generally.

g ___ Teachers are better qualified to evaluate the results of their teaching than experts who are not in daily contact with the classroom. 66:

h ___ The Ph.D. generally has higher prestige than the Ed.D.

i ___ Teachers should be trained to do research on instructional methods in their own classrooms, sometimes called "action research." 68:

j ___ Schools or departments of education generally have low prestige within the universities.

k ___ Persons who wish to make a career of educational research should receive most of their research training from professors in the behavioral sciences **outside** schools of education. 70-

9.2 Which three of the issues touched on above are **most frequently discussed as problems** of the profession in your school? (Write in the appropriate letters below.)

___ ___ ___

71:

1-3
2-7
3:
6:

9.3 The following is a list of factors that some people claim have hindered the advancement of educational research. If you think any of these has hindered educational research, place a check in the appropriate box. (Leave blank if you think it has not hindered research.)

Major hindrance	*Minor hindrance*		
☐	☐	The quality of research training provided in graduate schools or departments of education.	9:
☐	☐	The quality of research techniques and methods used in educational research.	
☐	☐	Intellectual ability of people doing research in education.	11:
☐	☐	Amount of financial support available for research.	
☐	☐	Kinds and amount of organizational provisions for research at universities, school systems, etc.	13:
☐	☐	Problems chosen for investigation by researchers.	
☐	☐	Lack of interest in educational research on the part of behavioral scientists outside schools of education.	15:
☐	☐	Educational philosophies and ideologies of researchers.	
☐	☐	Types of services and studies desired by school systems.	17:
☐	☐	Needs and interests of publishing companies.	
☐	☐	Amounts of teaching, administrative, and other non-research duties connected with university jobs held by people in education.	19:
☐	☐	Rewards offered potential researchers to serve as speakers, editors, consultants, workshop participants, etc.	
☐	☐	Low standards for acceptance of research articles in journals.	21:
☐	☐	Lack of interest in research on the part of administrators of schools or departments of education.	
☐	☐	Lack of recognition and rewards for research accomplishment.	23:
☐	☐	Other (what?)____________________	

X. PERSONAL INFORMATION

10.1 Your name: ______________________________________ 25:

10.2 Your other university positions: 29:

1 ☐ Dean
2 ☐ Associate dean
3 ☐ Assistant dean
4 ☐ Professor
5 ☐ Associate professor
6 ☐ Assistant professor
7 ☐ All other positions ______________________________

____

10.3 What university position did you hold before assuming responsibilities for the faculty research program?

_______________________________ 31-

10.4 How many courses are you teaching this school term? _______ no. 32:

10.5 Do you supervise doctoral theses?

1 ☐ Yes 2 ☐ No 34-

10.6 IF YES: How many do you supervise during the average school year? _______ no 35:

10.7 Have you ever been employed by a school system?

1 ☐ Yes 2 ☐ No 37-

10.8 IF YES: What position(s) and for how long:

38:

40-X

10.9 What type of institution did you attend for most of your undergraduate education? (Check only one.)

41-

1 ☐ Two-year junior college

2 ☐ Two- or three-year normal school

3 ☐ Four-year teachers college

4 ☐ Teacher preparation unit of a college

5 ☐ Teacher preparation unit of a university

6 ☐ Other unit of a university

7 ☐ Liberal arts college (not part of a university)

8 ☐ Other (please specify) _______________________________

10.10 Did you receive most of your graduate training in a school or department of education, or in some other division of the university?

1 ☐ School or department of education 42:

2 ☐ Other division (which?): _______________________________

10.11 In what department or program did you do most of your graduate work?

_______________________________ 44:

F37

10.12 What was your major field of concentration? ________________________________ 46:

10.13 What degrees do you hold? ________________________________ 48:

10.14 Who was the major advisor on your doctorate (or highest degree if not a doctorate)?

________________________ ________________________ 50-

(Name) *(Position)*

10.15 How well do you feel your graduate training prepared you as a professional researcher?

1 ☐ Very satisfactorily 51-

2 ☐ Satisfactorily

3 ☐ Unsatisfactorily

4 ☐ Very unsatisfactorily

5 ☐ Can't say

10.16 What was your first job after obtaining your highest degree?

52-

10.17 Aside from the work on your dissertation, what has been the longest period of time during which research was your primary activity?

1 ☐ At no time was research my primary activity 53-

2 ☐ 1 to 6 months

3 ☐ 7 to 12 months

4 ☐ 13 to 24 months

5 ☐ More than 24 months

10.18 *If research was ever your primary activity:* When was this and what did you do?

54:

10.19 Have you ever been a staff member of a research organization?

1 ☐ Yes 2 ☐ No 56-

10.20 **IF YES:** What was the title of the organization, and when were you a staff member?

57:

10.21 Have you ever taught a course in the methods of educational research?

1 ☐ Yes 2 ☐ No 59-

10.22 IF YES: What was the course(s)?

60-

10.23 Have you ever received a research grant from any of the following agencies? (Check the appropriate spaces.)

1 ☐ The Cooperative Research Program, U.S.O.E. 61:

2 ☐ National Defense Education Act

3 ☐ National Science Foundation 63:

4 ☐ National Institute of Mental Health

5 ☐ Carnegie Corporation 65:

6 ☐ Ford Foundation

7 ☐ Kellogg Foundation 67-

Other organization(s) supporting research (please specify)

68:

10.24 As mentioned earlier, some researchers work in groups or teams with one or more other researchers, while others do individual research. Approximately how much of your research time have you spent doing research with other researchers?

1 ☐ All 4 ☐ Some 70-

3 ☐ About half

2 ☐ Most 5 ☐ None

10.25 Do you personally prefer to work with other researchers, or do you prefer to work on your own?

1 ☐ Prefer a team 71-

2 ☐ Prefer working on my own

3 ☐ Don't care

10.26 Have you ever worked on an interdisciplinary research team?

1 ☐ Yes 2 ☐ No 72-

10.27 **IF YES:** What disciplines, other than your own, did the other researchers represent?

73:

1-3

10.28 About how many research articles or monographs have you published since obtaining your highest degree? (Please enclose a bibliography if possible) 2-8 3: 6: 9:

____
no.

10.29 What is your special field?____ 11:

10.30 What is your age?________ 13:

10.31 Are you currently engaged in research?

1 ☐ Yes 2 ☐ No 15-

10.32 **IF YES:** Would you briefly describe it?

16:

10.33 Check the professional magazines which you **regularly read:** 18:

☐ Administrative Science Quartlery
☐ American Journal of Sociology
☐ American Psychologist
☐ American Sociological Review
☐ Behavioral Scientist
☐ Comparative Education Review
☐ Educational and Psychological Measurement
☐ The Education Digest
☐ The Elementary School Journal
☐ The High School Journal
☐ Harvard Educational Review
☐ Higher Education
☐ History of Education Quarterly
☐ Journal of Abnormal and Social Psycholooy
☐ Journal of Applied Psychology
☐ Journal of Education
☐ Journal of Educational Psychology
☐ Journal of Educational Research
☐ Journal of Experimental Education
☐ Journal of Secondary Education
☐ Journal of Teacher Education
☐ Nea Journal
☐ NEA Research Bulletin
☐ The Nation's Schools
☐ Phi Delta Kappan
☐ Psychological Abstracts
☐ Psychological Review
☐ Review of Educational Research
☐ School Review
☐ School and Society
☐ Sociology of Education
☐ Theory into Practice (Ohio State)
☐ Teachers College Record
☐ U.S. Office of Education Bulletin

☐ Others____

10.34 In which professional associations are you most active? 22.

10.35 How interested would you be in joining an association of university educational research coordinators? 23.

Very interested	☐ 1	Not very interested	☐ 4
Moderately interested	☐ 2	Depends (on what?)	☐ 5

10.36 Do you have any additional comments to make about any of the topics covered in the questionnaire, or about any topics which you feel should have been covered? 24

A. Please send us any materials which describe the faculty research program, for example, a list of faculty publications, or a history of research in your institution.

B. If you have reports which indicate the types of positions which doctorate recipients hold, we would appreciate receiving a copy.

C. Please enclose a list of your own publications, if readily available.

F41

QUESTIONNAIRE

(for directors of research units in graduate schools of education) 1-4

2-1

3:

6:

I. HISTORICAL INFORMATION ABOUT YOUR RESEARCH UNIT

1.1 Name of the research unit:______________________________

1.2 When was the unit founded?______________________________ 9:

1.3 What person, group, or agency originally proposed that the unit be founded?

11:

____
(Title of person, group or agency)

1.4 What person, group, or agency was primarily responsible for actually implementing the idea? (If same person as above, write SAME)

14:

____
(Title of person, group or agency)

1.5 What were the precipitating events in the founding of the unit? (Please mention any other agencies which supported the idea in one way or another)

17:

1.6 Who was the first director of the unit, and what was his position in the university (dean, professor, etc.) and his field?

19-

______________________________ ______________________________
(Name) (Position)

20:

____
(Field)

F

1.7 How many persons have preceded you as director? ______ *no.* 22·

1.8 Of all those involved in the founding and operating of the unit, what person, group, or agency has been most influential in setting the current goals of the unit? When was this influence most felt?

________________________________ ________________________________ 23:

(Title of person, group, or agency) *(Period when most influential)*

1.9 Has your unit ever had another name? If so, please write the name and period that it was used.

Name	*Year to Year*

27:

1.10 Would you briefly describe any highly significant turning points in the course of the unit's history – for example, the appointment of a new director with different ideas about the program, the influx of new funds, the appointment of a new president or dean, the beginning of an important new research project, etc.

30:

1.11 Since becoming the director, have you introduced any innovations in terms of organization or activities? If so, please describe them briefly.

32:

1.12 Since the term "educational research" is used in a variety of ways, it is often difficult to know what a person means by it. To which of the following kinds of activities do you ordinarily apply the term "educational research," regardless of whether the activity is performed by your unit. (Check as many as you wish)

- a ☐ Collecting statistics on school practices and educational outcomes, sometimes called "school status studies." 34:
- b ☐ Designing new curricula and methods of instruction.
- c ☐ Evaluating the effectiveness of new curricula and methods. 36:
- d ☐ Local school surveys (curriculum, financial, plant, etc.)
- e ☐ Investigating factors which affect the teaching-learning process in the classroom. 38:
- f ☐ Disseminating new curricula, methods of instruction, or other school practices.
- g ☐ Investigating factors which affect school administration. 40:
- h ☐ General psychological studies of human learning or development.
- i ☐ Presenting evidence to legislators of the need for greater support for the schools. 42:
- j ☐ Developing new tests and measurements.
- k ☐ Analyzing the key concepts or philosophical assumptions underlying current educational issues. 44:
- l ☐ Studying the educational research journals for lecture materials.

1.13 Which of the above activities do you feel are most important for the long term **improvement of education**, regardless of whether you have checked the activity as "research." (Write the appropriate letters in the spaces below according to their importance.)

______ 1st ______ 2nd ______ 3rd 46:

NOTE: In the remainder of this questionnaire, the term "research" will be used to mean empirical research, as distinguished from field services, library research, reviews of the literature, or promotional activities. The term "faculty" will be used to designate all persons who are teaching graduate students in the school or department of education, either full-time or part-time.

II. ADMINISTRATIVE CONTROL

2.1 Does your unit have a directing or advisory board, that is, apart from committees composed entirely of staff members of the unit?

1 ☐ Yes 2 ☐ No (IF NO: Skip to Question 2.5) 49-

If a directing or advisory board:

2.2 How many of the members are:

___ University administrators 50:
___ Education administrators
___ Education faculty 52:
___ Other faculty (outside education)
___ Director of the research unit (i.e., yourself) 54:
___ Other staff of the research unit
___ Local or State educational officials 56:
___ Foundation officials
___ Other (please specify) ______________________________ 58-

______ Total 59-

2.3 Who chooses new members?

☐ The board itself
☐ University administration
☐ Education administration 60:
☐ Education faculty
☐ Other faculty (outside education)
☐ Bureau committee
☐ Other (please specify) ______________________________

2.4 What are the main responsibilities of this group?

62:

2.5 What individual(s) or group(s) determine research promotions and salaries of the researchers associated with your unit?

64:

..6 As director of a research unit, to what administrative officer are you directly responsible? 66-

____
(Title of officer)

2.7 Is your research unit affiliated with any particular department, program, or division within the school of education?

1 ☐ No   2 ☐ Yes (Which?)____________________________ 67:

IF YES: In what ways is the research unit affiliated with this department, program, or division?

69:

1-4
2-2
3:
6:

The following questions refer to studies which are conducted by **staff members** of your unit as well as by professors outside the unit who use its **facilities.**

2.8 **In most cases,** which of the following participate in the decision about whether or not to undertake a study?

Participates
(Check as many
as apply)

☐ The individual who proposed the study 9:
☐ The directing or advisory board of the research unit
☐ A committee or council for the entire faculty research program in education 11:
☐ A director or coordinator of the entire faculty research program in education
☐ The dean or chairman of the graduate education program 13:
☐ Staff members of the research unit
☐ Practitioners in school systems (local or state) 15:
☐ YOURSELF
☐ Others (who?)____________________________ 17-
____

2.9 What are the most important considerations or criteria that come into play when deciding whether to undertake a particular study? (Please be as specific as possible.)

18-

2.10 How much freedom do you have personally to determine the research program of your unit?

1 ☐ A great deal of freedom
2 ☐ A moderate amount of freedom 19.
3 ☐ Only a little freedom
4 ☐ Almost no freedom

2.11 What specific circumstances, if any, limit your freedom to determine the unit's research program?

20.

2.12 Among all those on the faculty who are doing research in association with your unit, about how many have their teaching load reduced by the following proportions for the purpose of doing research?

Reduction	*No.*	
1-33%	___	21:
34-50%	___	23:
51-99%	___	25:
100% (full-time research)	___	27:

29:

2.13 Are faculty members in the graduate program exempted from committee or other administrative tasks to do research in association with your unit?

1 ☐ Yes 2 ☐ No 31.

IF YES: About how many faculty members associated with your unit presently have this kind of exemption?

No. of faculty members ______ 32:

2.14 Research units in some universities receive unqualified support from the administration, while in others certain problems arise. Have you experienced any difficulties in gaining support for your plans from the administration of the graduate school or department of education in the past three years? If so, please briefly describe the problems. (Your remarks will be treated confidentially.)

34.

III. RESPONSIBILITIES OF THE DIRECTOR

3.1 Directors of research units often perform a variety of roles. From the following list of activities please check those in which you are engaged, adding any other activities which are relevant to your position as director.

a ☐ Seeking funds for researchers. 35:
b ☐ Collecting and disseminating information about financing of research.
c ☐ Budgeting for the unit as a whole. 37:
d ☐ Allocating outside funds for research.
e ☐ Negotiating with or reporting to funding agencies. 39:
f ☐ Communicating the needs of the unit's research program to the administration.
g ☐ Facilitating communications among researchers associated with your unit. 41:
h ☐ Formulating the goals of the unit's research program.
i ☐ Judging the adequacy of research proposals written by individuals associated with your unit. 43:
j ☐ Encouraging researchers in the university who are **not** associated with your unit to become associated in some way.
k ☐ Handling requests for released time to conduct research. 45:
l ☐ Encouraging individuals associated with your unit to undertake research which is of general interest to **scholars in education.**
m ☐ Encouraging individuals associated with your unit to undertake research which is of immediate help to **schools.** 47:
n ☐ Gaining the assistance of scholars in other departments in the university in planning or executing research.
o ☐ Providing facilities (other than funds) for researchers. 49:
p ☐ Assisting staff members in writing proposals.
q ☐ Assisting staff members with analytical problems which arise in their research. 51:
r ☐ Providing opportunities for students to participate in research.
s ☐ Directing or facilitating service studies for schools in the area. 53:
t ☐ Handling problems of interpersonal relations among staff members.
u ☐ Conducting your own research. 55:
v ☐ Other responsibilities:________________________________

3.2 Approximately what proportion of your total university work is spent on all of these activities taken together? ________% 57:

3.3 Among those activities which you have checked above, which do you devote **most time** to? (Please list **no more than three** activities by writing the appropriate letters below.) 59: 61: 63:

____
(letters)

3.4 In your own opinion, which of the activities listed (in question 3.1) **should receive greater emphasis** in your unit – regardless of how much time is presently devoted to them? (List as many as you would like by writing the appropriate letters.) 65: 67: 69: 71: 73:

____
(letters)

1-4

3.5 Under which of the following circumstances, if any, have you ever **intervened** in a study which was being conducted in your unit? (Check as many as you wish) 2-3 3: 6:

☐ An investigator was having difficulty analyzing his data. 9:

☐ A study was failing to meet its deadline.

☐ A project was having budgetary problems. 11:

☐ A project was having personnel problems.

☐ A sponsor or client was worried about the progress of a study. 13:

☐ You passed on information which seemed valuable to a study.

☐ Other circumstances: (which?) ________________________________ 15:

____

☐ Practically never intervened, regardless of circumstances.

3.6 Who is considered by the administration to be **responsible** for the successful completion of most research projects carried out in your unit?

1 ☐ The project members exclusively, or

Project members with: 17:

2 ☐ Department chairmen

3 ☐ Dean or assistant dean

4 ☐ A research committee

5 ☐ Yourself

3.7 On the whole, would you say that the duties associated with the directorship have **hindered** or **helped** your own research?

1 ☐ Hindered 2 ☐ Helped 3 ☐ There has been no appreciable effect one way or the other 18.

IF EITHER HINDERED OR HELPED: In what ways have your duties hindered or helped your own research?

19.

3.8 There are several groups whose opinions are important to educational researchers. In the long run, would you rather be known and respected:

a. ☐ Throughout the institution where you work. 20.

b. ☐ Among scholars in your field in different institutions.

c. ☐ Among teachers or administrators in school systems.

3.9 Some scholars in education seek mainly to achieve recognition from behavioral scientists outside the profession, while others are primarily concerned with being recognized by other scholars in the profession. Please check the group whose judgment is **more important** to you personally.

☐ Scholars outside of education 21:

☐ Scholars in education

23:

IV. ACTIVITIES OF YOUR UNIT

4.1 In which of the following areas, if any, is research now being undertaken in your unit? And in which areas would you like to see more research? (Double-check the boxes where you mainly have higher education in mind.)

Now	*Would like more*		
☐	☐	School finance	25:
☐	☐	Educational administration or organization (other than finance)	
☐	☐	Tests and measurements	27:
☐	☐	Other research methodology	
☐	☐	Guidance and counseling	29:
☐	☐	Methods of instruction	
☐	☐	Talent, creativity of students	31:
☐	☐	Special education	
☐	☐	Psychology of learning	33:
☐	☐	Child development	
☐	☐	Adolescent development	35:
☐	☐	School-community relations	
☐	☐	Teacher personality	37
☐	☐	Teaching as a profession	
☐	☐	History of education	39:
☐	☐	Comparative education	
☐	☐	Programmed instruction	41:
☐	☐	Educational technologies	
☐	☐	Philosophy of education	43:
☐	☐	Teacher training research	
☐	☐	Sub-cultural differences of students	45-
		Curriculum research in:	
☐	☐	Mathematics	46:
☐	☐	Natural sciences	
☐	☐	Social studies	48:
☐	☐	Reading	
☐	☐	Foreign languages	50:
☐	☐	Other language arts	
☐	☐	Business and distributive education	52:
☐	☐	Physical education	
☐	☐	Other (what?)____________________	54-

4.2 Some units are highly specialized while others try to do research on a wide range of topics. Woul you say that your unit is equally concerned with several areas or that it is specialized?

Equally concerned with several areas ☐ 1 Specialized ☐ 2 55-

IF SPECIALIZED: What is your specialty?

56:

4.3 **Which of the following services are perfomed by your unit?**

☐ Advise the education faculty on research problems 58:
☐ Advise faculty members outside of education on research problems
☐ Conduct school surveys (financial, curriculum, plant, etc.) at the request of local schools 60:
☐ Supply individual consultants to local schools
☐ Supply speakers for local school conferences or workshops 62:
☐ Help schools implement new programs
☐ Help schools evaluate new programs 64:
☐ Handle job placement for students
☐ Develop tests for the use of classroom teachers in schools in the state or area 66:
☐ Sell or distribute tests to the schools
☐ Construct examinations or other evaluative instruments to be used by members of the university staff 68:
☐ Publish a journal, bulletin, or newsletter
☐ Prepare bibliographies on educational topics 70:
☐ Maintain a reference library
☐ Train teachers 72:
☐ Other (which?) ____________________

____

1-4
2-4
3:
6:

4.4 **IF FIELD SERVICES ARE PROVIDED TO LOCAL OR STATE SCHOOL SYSTEMS** (for example, school surveys, consultation, test scoring or administration, or workshops and courses) *answer questions a-d.* **(IF NOT:** *skip to question 4.5.***)**

a. How many professional staff members do you expect will provide field services this school year?

________ 9:
no.

b. How many of those who provide services **also** conduct **research** in your unit?

________ 11:
no.

c. Which arrangement do you prefer:

Separate staffs for service and research	☐ 1
The same staff providing both	☐ 2
No particular preference	☐ 3

13-

d. Is there a division(s) within your unit which is principally concerned with the provision of services to school systems?

1 ☐ Yes 2 ☐ No 14-

4.5 **During the past year did your unit conduct service investigations for any of the following?**

- ☐ **The state department of education.**
- ☐ **The dean of the college of education (or head of department of education)** **15:**
- ☐ **Other university officials** **17:**
- ☐ **Faculty committees**

4.6 **It is sometimes claimed that the desire of school systems for field services draws personnel and resources away from educational research. Do you consider this a problem in your unit? If not; why not? If so, how do you think the problem could be alleviated?**

19:

4.7 **In the past three years, has your unit undertaken joint investigations with any other research or service unit? If so, what unit(s)?**

21:

4.8 **To the best of your knowledge, how well informed is the faculty in the graduate school or department of education about the activities and goals of your research unit?**

1 ☐	**Well informed**	3 ☐	**Poorly informed**
2 ☐	**Somewhat informed**	4 ☐	**Can't say** **23-**

4.9 **Were there any major activities of a research or service nature which were performed by the unit at one time, but which have since been dropped? If so, what was the activity and when was it dropped?**

24:

V. TRAINING OF GRADUATE STUDENTS (If no graduate students are associated with or working in the unit, skip to page 15)

5.1 Which of the following statements is most applicable to your unit?

1 ☐ There is a training program, allowing students to be moved from project to project as best suits their abilities and needs. 26-

2 ☐ Although there is no training program, students manage to get around to various projects

3 ☐ Students are hired to do specific tasks and tend to leave the unit as soon as their job is completed.

5.2 How many research **projects** associated with your unit have doctoral students in education as assistants, using material for dissertations, etc.?

_______ 27:
no.

5.3 How many doctoral **students** in education are working with these research projects?

_______ 29:
no.

5.4 Approximately what **proportion** does this represent of all doctoral students in the school or department of education?

_______% 31:

5.5 Have you experienced any difficulties in getting **qualified** students to work on projects in your unit? If so, would you briefly describe the problems?

33:

5.6 How many doctoral students in the school or department of education are using the data or facilities of your unit in preparing their doctoral **dissertations**?

_______ 35:
no.

5.7 Are there any doctoral students from **outside** of education who are associated with or working in your unit (using data, getting experience, seeking advice, etc.)? 37-

1 ☐ No   2 ☐ Yes   (How many?___________) 38:

From what departments? ________________________________ 40-

____

5.8 During this year does the unit as such offer seminars or courses in methods and techniques of research with or without credit?

1 ☐ Seminars 2 ☐ Courses 3 ☐ Neither (**IF NEITHER, skip to question 5.9**) 41-

IF EITHER SEMINARS OR COURSES:

a. Who attends? (*Check as many as apply*)

☐ Staff members of the unit 42:
☐ Non-staff faculty in education
☐ Non-staff faculty outside education 44:
☐ Students in the unit
☐ Students outside the unit 46:
☐ Teachers or administrators in local schools
☐ Others (Who?) ______________________________ 48-

b. What are the major topics of these seminars or courses?

49-

c. Is credit given toward either a degree or certification?

1 ☐ Degree 50-
2 ☐ Certification
3 ☐ Neither

d. What are the university or bureau positions held by those who conduct seminars or courses?

51-

5.9 Are funds earmarked for a training program or for courses and seminars?

1 ☐ No 2 ☐ Yes (How much $ ____________________) 52-
3 ☐ Does not apply to our situation 53:

5.10 IF THERE ARE TRAINING FUNDS: How are these funds used?

57-

5.11 Over the past three years, approximately how many recipients of the doctorate who had worked in your unit entered the following positions immediately after receiving the degree?

Number of Doctoral Recipients

In school systems

__________ Administration 58:
__________ Teaching
__________ Guidance or counseling 60:
__________ Research

In colleges or universities

__________ Administration 62:
__________ Admissions office
__________ Primarily teaching 64:
__________ Primarily research
__________ Primarily field services 66:

Research elsewhere

__________ State Department of Education
__________ Other outside research agencies 68:

__________ **All other fields (which?)** ______________________________

5.12 Approximately how many of these doctoral students who worked in your unit in the past three years remained in the unit after graduation? 70:

______ 72:
no.

Does not apply to our situation ☐

5.13 Are there any innovations which you would like to make in the unit's use or training of students? If so, what?

74:

5.14 What problems, if any, have arisen in coordinating the training program of your unit with the program provided for graduate students in the school or department of education, and what factors have been responsible for any such problems?

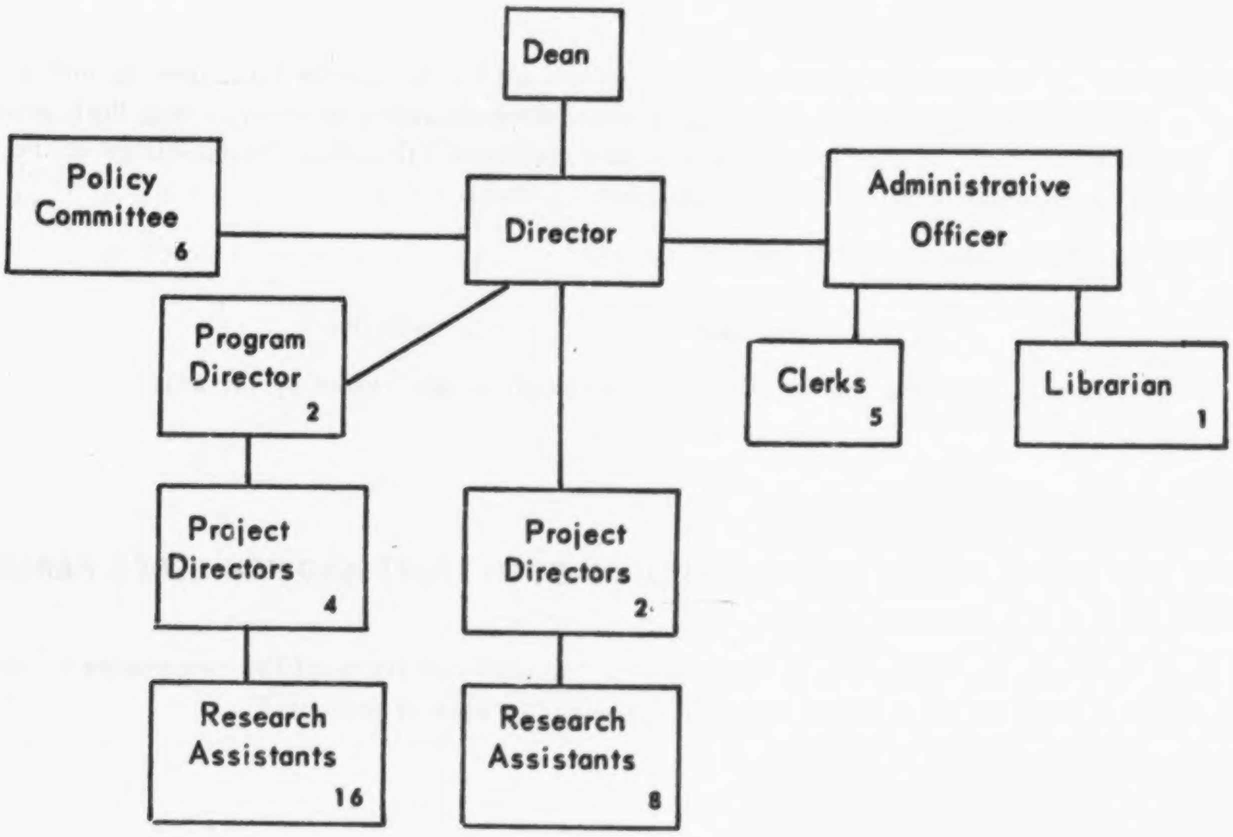
76:

F55

VI. PROFESSIONAL PERSONNEL

6.1 In the space below, please sketch the actual table of organization of your unit, indicating the title of each position, staff and line relationships, and the number of personnel in each position. (Include all full- and part-time personnel who are either on the staff or only using the facilities of the unit.) 1-4 2-5 3: 6:

EXAMPLE:



. . . .

9-

10-

11-

12-

13-

14-

6.2 To the best of your knowledge, why have faculty members who are conducting research on topics which are studied by your unit remained **unattached** to the unit? (Here we are particularly interested in the comparative advantages of outside versus bureau research **as seen by the faculty.**)

15:

6.3 Some research units have their own staff, while others primarily provide facilities for non-staff faculty members. How many senior researchers (excluding students) are conducting their studies entirely **within** your unit as staff members, and how many are only using the **facilities** of the unit (such as IBM equipment, clerical staff, consultants, library, etc.)?

a. Number of professional research **staff** in the unit: 17:

_______ *Part-time* _______ *Full-time* 19:

b. Number of faculty members (non-staff) whose research is **facilitated** by the unit:

____
no. 21:

6.4 **IF THE UNIT FACILITATES THE RESEARCH OF BOTH STAFF AND NON-STAFF PERSONNEL:**
(**IF NOT:** Skip to question 6.5)

a. What differences are there, if any, between the research activities of the **two groups** of researchers (staff and non-staff) in terms of quality, topics, or size of projects?

23:

b. The following list represents three types of policies found in research organizations. Please indicate (1) the policy which was followed during the **first year,** (2) the policy which is **currently** followed, and (3) the policy which you personally **prefer.** (Check more than one under each category if necessary)

	First year	*Currently*	*Prefer*	
Facilitate the research of faculty not on the staff of the unit.	☐ 1	☐ 1	☐ 1	26-
Facilitate the research of individuals on the staff of the unit.	☐ 2	☐ 2	☐ 2	27-
Pursue a program of research which has been formulated by the staff of the unit as a whole.	☐ 3	☐ 3	☐ 3	28-

c. Why do you **prefer** the policy which you have indicated above?

29:

F57

6.5 Are there any full-time, salaried professional researchers in your unit who do no teaching?

1 ☐ No   2 ☐ Yes   (*Number:* ________)   31-

32:

6.6 How many **projects** are being conducted by a **single** investigator (excluding students), and how many are research **teams** composed of two or more professional persons?

34:

Single investigators ________ *no.*   Research teams ________ *no.*   36:

6.7 IF ANY RESEARCH TEAMS: (IF NONE, skip to question 6.8)

a. How many **professional persons** associated with your unit are members of research teams?

________ *no.*   38:

b. Thinking only of those research teams which are composed entirely of professional persons in your own graduate school or department of education, how many **teams** associated with your unit are composed of personnel from –

	No. of teams	
Different academic fields (e.g., educational sociology or psychology)	________	40:
Different specialties in professional education (e.g., guidance, administration, elementary education)	________	42:
An educational specialty and an academic field	________	44:

6.8 Research projects are organized in several ways. Which of the following types of research effort would you personally **prefer** that persons associated with your unit engage in, and which type would you say is most **prevalent** in your unit at the present time?

	Most prevalent	*Prefer*	
Highly individualized effort – each researcher pursuing his own line of inquiry independently.	☐ 1	☐ 1	46:
Diversified team effort – two or more members cooperating in inquiry related to but concerned with different dimensions or facets of the same problem.	☐ 2	☐ 2	
Consolidated team effort – two or more members cooperating in inquiry on the same facet of the same problem.	☐ 3	☐ 3	
Can't say	☐ 4	☐ 4	

6.9 How many of the senior researchers associated with your unit this year are members of –

No. of individuals

Another **university?** ______ 48:

Another **professional** school within your own university? ______ 50:

An **academic** department within your own university (outside of education?) ______ 52:

6.10 Do you ever experience any difficulty in inducing faculty members in **education** in your university to undertake studies through your unit?

1 ☐ Yes, a great deal of difficulty
3 ☐ No, it does not pose a problem
2 ☐ Yes, some difficulty
4 ☐ No effort is made to induce faculty members

54-

IF YES: What kinds of problems have arisen?

55:

6.11 Approximately what proportion of the professional **staff** of your unit in the past three years were recruited from the following sources?

%

______ Behavioral science departments **outside** of your own university 57:

______ Behavioral science departments **within** your own university 59:

______ Schools or departments of education **outside** your own university 61:

______ The school or department of education **within** your own university 63:

______ School systems (local or state) 65:

100%

6.12 On the whole, which problem would you say has been **more** serious in recent years? (Check one)

1 ☐ Obtaining sufficient personnel to carry on the research program. 67-

2 ☐ Providing sufficient opportunities for persons who wish to do research.

3 ☐ Neither of these has been a problem.

F59

6.13 Please designate two individuals associated with your unit whom you consider to be making the most important contribution to the unit's effectiveness. What is their contribution? (If you wish to preserve the anonymity of these individuals, you may designate them by A and B.)

68:

6.14 Without mentioning names, could you think of two persons associated with your unit with whom you were recently displeased and tell us briefly why you were displeased?

70:

6.15 There are several ways in which research units may involve faculty members from outside of 1-4
education. Which of the following arrangements, if any, exist with (1) academic departments, and 2-6
(2) other professional schools; and which would you like to see established? 3:
6:

	Now exist with: *Aca. depts.*	*Prof'l schools*	*Would like to see established with:* *Aca. depts.*	*Prof'l schools*	
Joint research appointments.	☐	☐	☐	☐	9:
Interdisciplinary committees or seminars which are connected with scholarly issues.	☐	☐	☐	☐	13:
Interdisciplinary conferences.	☐	☐	☐	☐	17:
Consultation on specific studies.	☐	☐	☐	☐	21:
Visiting professors from other universities for research.	☐	☐	☐	☐	25:
Joint research publications.	☐	☐	☐	☐	29:
Other types of interchange (which?):					
______________________________	☐	☐	☐	☐	33:
______________________________	☐	☐	☐	☐	37:

6.16 In your own university, is there any research being done outside the school of education which is related to an area of interest within your unit?

1 ☐ **Yes** 2 ☐ **No** 3 ☐ **Can't say** 41-

IF YES: What contacts, if any, are maintained with these investigations (e.g., consultation, exchange of results, informal conversation, exchange of personnel, etc.)?

42:

6.17 Are any of the research personnel associated with your unit **teaching** in (1) the **academic** departments or (2) other **professional** schools in the university? (If so, please give numbers below)

No. teaching in:

______ Academic departments 44:

______ Other professional schools 46:

6.18 In general, how **fruitful** have interchanges been with the **academic** departments in the university; what **problems** have been encountered, if any; and what **directions** would you like future interchanges to take?

48:

VII. FINANCIAL SUPPORT

7.1 What do you expect to be your total budget (or gross revenues) this year, and what was it three years ago?

51:

This year: $______________ **Three years ago: $______________** 55:

F61

7.2 Approximately what proportion of the budget is for **research**, and what proportion is for **school services?** 59:

Research ____% School services ____% 61:

7.3 What proportion of your **research** budget is "free" money, i.e., to be used in any way you see fit?

____% 63:

7.4 What is the budget of the **smallest** and of the **largest** project being undertaken through your unit, and what is the **average** (mean) budget of all such projects? 65:

69:

Smallest $________ Largest $________ Average $________ 73:

7.5 Over the past three years, approximately what per cent of all plans for new studies to be undertaken in your unit **originated** with the following: 1-4

2-7

% 3:

6:

Staff members in your unit ____ 9:
Faculty in the school or department of education ____ 11:
Faculty in other departments in the university ____ 13:
University administrators ____ 15:
School systems (local, state) ____ 17:
Other (what?)________________ ____ 19:
100%

7.6 Approximately what proportion of the research projects in your unit which are supported by outside agencies received **supplemental funds** from the **university** in the past fiscal year (i.e., university contribution)?

____% of projects receiving university funds 21:

☐ Does not apply to our situation.

7.7 What proportion of the **total cost of all such projects** was provided by the university in the past fiscal year?

____% of total cost 23:

☐ Does not apply to our situation

7.8 About how many research proposals **originated** by professional persons associated with your unit during the past fiscal year; and how many of these proposals were successful in obtaining **financial support?** 25:

Number originated: ____ Number supported: ____ 27:

Does not apply to our situation ☐

7.9 In the past fiscal year, which of the following possible sources financed proposals originating with and done by researchers associated with your unit? (If none originated, check here: ☐)
(Please estimate the percentage of funds from each source)

%
____ University research funds 29:
____ School or department of education research funds 31:
____ State government 33:
____ Federal government 35:
____ Foundations 37:
____ School systems (local, state) 39:
____ Professional organizations 41:
____ Other (please specify)________________ 43:
100%

7.10 Would you like the percentage of funds from each source to increase, decrease, or remain the same in the future? (Check the appropriate boxes below)

Increase	*Same*	*Decrease*		
☐	☐	☐	University research funds	45:
☐	☐	☐	School or department of education research funds	
☐	☐	☐	State government	47:
☐	☐	☐	Federal government	
☐	☐	☐	Foundations	49:
☐	☐	☐	School systems (local, state)	
☐	☐	☐	Professional organizations	51:
☐	☐	☐	Other (please specify)________________________	
1	2	3	________________________	

7.11 Which of the following funding agencies outside the university supported research which was undertaken through your unit in the past year? (If none, check here: ☐)

☐ The Cooperative Research Program, U.S.O.E. 53:

☐ National Defense Education Act

☐ National Science Foundation 55:

☐ National Institute of Mental Health

☐ Carnegie Corporation 57:

☐ Ford Foundation

☐ Kellogg Foundation 59:

☐ Other (which?)____

____

____

1-4
2-8
3:
6:

7.12 If your unit were to receive about $200,000 for facilitating or conducting educational studies, or for preparing researchers, how would you like to see these funds used?

9:

7.13 Please describe any changes in the research program of your unit which are **planned for the future.** (In order to project future developments in the nation, we need to learn about specific intentions. We would therefore appreciate your giving careful attention to this question.)

11:

7.14 Which educational research units (bureaus, centers, institutes, lab schools) in the nation are doing what you consider to be the **most competent and worthwhile research?**

Name of units	*Name of universities*	
______________________	______________________	13:
______________________	______________________	16:
______________________	______________________	19:

VIII. GENERAL EDUCATIONAL OPINIONS AND PROBLEMS OF EDUCATIONAL RESEARCH

8.1 There are several issues pertaining to the graduate program in education which are receiving attention these days. Each of the following statements takes a position on one of these issues. Indicate the extent to which you agree or disagree with each statement by placing the appropriate number in the space provided.

1 – Strongly agree
2 – Mostly agree
3 – Undecided
4 – Mostly disagree
5 – Strongly disagree

a ___ Elementary school teaching is a profession, like law or engineering. 22:

b ___ The findings of educational research are generally of little help to the classroom teacher.

c ___ The Ph.D. should be a research degree and the Ed.D. should be a professional degree. 24:

d ___ We already know so much about the teaching-learning process that the main problem facing us is how better to disseminate this knowledge so that it is used in the schools.

e ___ The research techniques and methods used in educational research tend to lag behind those used in behavioral science generally. 26:

f ___ Teachers are better qualified to evaluate the results of their teaching than experts who are not in daily contact with the classroom.

g ___ The Ph.D. generally has higher prestige than the Ed.D. 28:

h ___ Teachers should be trained to do research on instructional methods in their own classrooms, sometimes called "action research."

i ___ Schools or departments of education generally have low prestige within the universities. 30:

j ___ Persons who wish to make a career of educational research should receive most of their research training from professors in the behavioral sciences **outside** schools of education.

8.2 Which **three** of the issues touched on above are **most frequently discussed as problems** of the profession in your school? (Write in the appropriate letters below.)

________ ________ ________ 32:

F6

8.3 The following is a list of factors that some people claim have hindered the advancement of educational research. **If you think** any of these has **hindered** educational research, place a check in the appropriate box. (Leave blank if you think it has **not** hindered research.)

Major hindrance	*Minor hindrance*		
☐	☐	The quality of research training provided in graduate schools or departments of education.	35
☐	☐	The quality of research techniques and methods used in educational research.	
☐	☐	Intellectual ability of people doing research in education.	37
☐	☐	Amount of financial support available for research.	
☐	☐	Kinds and amount of organizational provisions for research at universities, school systems, etc.	39
☐	☐	Problems chosen for investigation by researchers.	
☐	☐	Lack of interest in educational research on the part of behavioral scientists outside schools of education.	41
☐	☐	Educational philosophies and ideologies of researchers.	
☐	☐	Types of services and studies desired by school systems.	43
☐	☐	Needs and interests of publishing companies.	
☐	☐	Amounts of teaching, administrative, and other non-research duties connected with university jobs held by people in education.	45
☐	☐	Rewards offered potential researchers to serve as speakers, editors, consultants, workshop participants, etc.	
☐	☐	Low standards for acceptance of research articles in journals.	47
☐	☐	Lack of interest in research on the part of administrators of schools or departments of education.	
☐	☐	Lack of recognition and rewards for research accomplishment.	49
☐	☐	Other (what?)______________________________	

IX. PERSONAL INFORMATION

9.1 Your name:______________________________________

9.2 Your other university positions: 51

1 ☐ Dean
2 ☐ Associate dean
3 ☐ Assistant dean
4 ☐ Professor
5 ☐ Associate professor
6 ☐ Assistant professor
7 ☐ All other positions______________________________________

____

F65

9.3 What position did you hold before becoming director of the research unit?

____ 53-

9.4 How many courses are you teaching this school term?______ 54:
no.

9.5 Do you supervise doctoral theses?

1 ☐ Yes 2 ☐ No 56-

9.6 **IF YES:** How many do you supervise during the average school year?______ 57:
no.

9.7 Have you ever been employed by a school system?

1 ☐ Yes 2 ☐ No. 59-

9.8 **IF YES:** What position(s) and for how long:

60:

9.9 What type of institution did you attend for most of your undergraduate education? **(Check only one.)**

1 ☐ Two-year junior college

2 ☐ Two- or three-year normal school

3 ☐ Four-year teachers college 62-

4 ☐ Teacher preparation unit of a college

5 ☐ Teacher preparation unit of a university

6 ☐ Other unit of a university

7 ☐ Liberal arts college (not part of a university)

8 ☐ Other (please specify)______________________________

9.10 Did you receive **most of your graduate training** in a school or department of education, or in some other division of the university?

1 ☐ School or department of education 63:

2 ☐ Other division (which?):______________________________

1-4
2-9
3:
6:

9.11 What was your major field of concentration?______________________________ 9:

9.12 What degrees do you hold?____________________________________ 11:

9.13 Who was the major advisor on your doctorate (or highest degree if not a doctorate)?

________________________ ________________________ 13-
(Name) *(Position)*

9.14 How well do you feel your graduate training prepared you as a professional researcher?

1 ☐ Very satisfactorily 14-
2 ☐ Satisfactorily
3 ☐ Unsatisfactorily
4 ☐ Very unsatisfactorily
5 ☐ Can't say

9.15 What was your first job after obtaining your highest degree?

15-

9.16 Aside from the work on your dissertation, what has been the longest period of time during which research was your primary activity?

1 ☐ At no time was research my primary activity 16-
2 ☐ 1 to 6 months
3 ☐ 7 to 12 months
4 ☐ 13 to 24 months
5 ☐ More than 24 months

9.17 If research was ever your primary activity: When was this and what did you do?

17:

9.18 Have you ever taught a course in the methods of educational research?

1 ☐ Yes   2 ☐ No 19.

9.19 IF YES: What was the course(s)?

20.

9.20 Have you ever personally received a research grant from any of the following agencies? (Check the appropriate boxes.)

1 ☐ The Cooperative Research Program, U.S.O.E. 21

2 ☐ National Defense Education Act

3 ☐ National Science Foundation 23

4 ☐ National Institute of Mental Health

5 ☐ Carnegie Corporation 25

6 ☐ Ford Foundation

7 ☐ Kellogg Foundation 27.

Other organization(s) supporting research (please sepcify)

28

9.21 Some researchers work in groups or teams with one or more other researchers, while others do individual research. Approximately how much of your research time have you spent doing research with other researchers?

1 ☐ All   3 ☐ About half   4 ☐ Some

2 ☐ Most   5 ☐ None 30.

9.22 Do you personally prefer to work with other researchers, or do you prefer to work on your own?

1 ☐ Prefer a team

2 ☐ Prefer working on my own 31.

3 ☐ Don't care

9.23 Have you ever worked on an interdisciplinary research team?

1 ☐ Yes 2 ☐ No 32-

9.24 IF YES: What disciplines, other than your own, did the other researchers represent?

33:

9.25 About how many research articles or monographs have you published since obtaining your highest degree? (Please enclose a bibliography if possible)

____
no. 37:

9.26 What is your special field?______________________________ 39:

9.27 What is your age?________ 41:

9.28 Are you currently engaged in research?

1 ☐ Yes 2 ☐ No 43:

9.29 IF YES: Would you briefly describe it?

44:

9.30 Check the professional magazines which you *regularly read:* 46:

- ☐ Administrative Science Quarterly
- ☐ American Journal of Sociology
- ☐ American Psychologist
- ☐ American Sociological Review
- ☐ Behavioral Scientist
- ☐ Comparative Education Review
- ☐ Educational and Psychological Measurement
- ☐ The Education Digest
- ☐ The Elementary School Journal
- ☐ The High School Journal
- ☐ Harvard Educational Review
- ☐ Higher Education
- ☐ History of Education Quarterly
- ☐ Journal of Abnormal and Social Psychology
- ☐ Journal of Applied Psychology
- ☐ Journal of Education
- ☐ Journal of Educational Psychology
- ☐ Journal of Educational Research
- ☐ Journal of Experimental Education
- ☐ Journal of Secondary Education
- ☐ Journal of Teacher Education
- ☐ NEA Journal
- ☐ NEA Research Bulletin
- ☐ The Nation's Schools
- ☐ Phi Delta Kappan
- ☐ Psychological Abstracts
- ☐ Psychological Review
- ☐ Review of Educational Research
- ☐ School Review
- ☐ School and Society
- ☐ Sociology of Education
- ☐ Theory into Practice (Ohio State)
- ☐ Teachers College Record
- ☐ U.S. Office of Education Bulletin

☐ Others______________________________

F69

9.31 In which associations are you most active? 50-

9.32 How interested would you be in joining an association of directors of educational research units?

Very interested	☐ 1	**Not very interested**	☐ 4
Moderately interested	☐ 2	**Depends (on what?)**	☐ 5

51-

9.33 Although it is difficult to measure objectively the success of an organization whose products are intellectual, usually the participants have a pretty good idea of how well the organization is doing. How successful do you personally feel your unit has been (1) in terms of the goals to which the unit aspires, and (2) in comparison with other research units in schools of education around the country which you know about? 52-

	In terms of unit's goals	*In comparison with others*
Highly successful	☐ 1	☐ 1
Somewhat successful	☐ 2	☐ 2
Somewhat unsuccessful	☐ 3	☐ 3
Very unsuccessful	☐ 4	☐ 4

(Continue to Page 30)

9.34 **Do you have any additional comments to make about any of the topics covered in the questionnaire, or about any topics which you feel should have been covered?** 54.

A. Please send us any materials which describe the unit's research program, for example, a list of the unit's publications, or a history of research in your unit.

B. Please enclose a list of your own publications, if readily available.

APPENDIX G

The Index of Formal Authority of Directors of Research Units

1. Does your unit have a directing or advisory board, that is, apart from committees composed entirely of staff members of the unit?

____Yes ____No

IF A DIRECTING OR ADVISORY BOARD:

How many of the members are:

____University administrators
____Education administrators
____Education faculty
____Other faculty (outside education)
____Director of the research unit (i.e., yourself)
____Other staff of the research unit
____Local or State educational officials
____Foundation officials
____Other (please specify)________________________________
____Total

	Score
Does not have a board	2
Has a board, and director is a member	1
Has a board, but director is not a member	0

Index of Formal Authority (cnnt.)

2. In most cases, which of the following participate in the decision about whether or not to undertake a study?

Participates
(Check as many as apply)

____ The individual who proposed the study
____ The directing or advisory board of the research unit
____ A committee or council for the entire faculty research program in education
____ A director or coordinator of the entire faculty research program in education
____ The dean or chairman of the graduate education program
____ Practitioners in school systems (local or state)
____ Others (who?)______________________________

	Score
Director participates	2
Director does not participate	0

3. What individual(s) or group(s) determine research promotions and salaries of the researchers associated with your unit?

	Score
Director only	2
Director and other	1
Not director	0

Index of Formal Authority (cont.)

4. Who is considered by the administration to be responsible for the successful completion of most research projects carried out in your unit?

____ The project members exclusively, or

Project members with:

____ Department chairmen

____ Dean or assistant dea

____ A research committee

____ Yourself

	Score
Director is held responsible	2
Director is not held responsible	0

Summary Scores on Index of Formal Authority:

	Summary Score	Number of Directors
	8	4
	7	6
	6	13
	5	12
	4	11
	3	10
	2	3
	1	1
	0	1
Total scored:		61
No answers on items:		3
Total directors:		64

Questions and Indices Used in Study of Reading Experts (Wilder)

How well do you feel your graduate training prepared you as a professional researcher?

___ Very well ___Well ___Not Well ___Poorly

Consider the balance in doctoral study in your field between preparing for teaching and preparing for research. What was it when you received your training?

More preparation for research than teaching ___

More preparation for college teaching than for research ___

About equivalent preparation for both ___

Can't say ___

How many graudate semesters of each of the following subjects did you take?

Research design and methods ___

Statistics ___

Experimental psychology ___

Testing and measurement ___

ETC. ___

Did you ever work as a research assistant for a faculty member?

____Yes ____No

Research Training Index

a. Did you ever work as a research assistant to a faculty member?

Yes = 1
No = 0

b. Balance in doctoral study in your field when you received your training was:

More for research than teaching = 1
All else = 0

Research Training Index (cont.)

c. Number of graduate semesters in statistics taken.

Three or more = 1
All else = 0

d. Number of graduate semesters in research design and methods taken.

Three or more = 1
All else = 0

Score 0 - 5

0-1 = Los (60%)
2+ = High (40%)

Current Research Index

a. Check activities you are doing this year.

Empirical research on reading = 1
All else = 0

b. Are you currently a staff member of a university research organization?

Yes = 1
No -= 0

c. Are you currently engaged in any research?

Yes = 1
No = 0

d. Approximately what percent of your time do you devote to the following activities:

Own research, any time = 1
no time = 0

e. Approximately what percent of your income comes from each of the following:

Salary from research bureau or project: any income = 1
no income = 0

Score 0 - 5

0-1 = Low (58%)
2+ = High (42%)